### 11. What only originates from the Tibia?

a. Tibialis anterior

b. Soleus

c. Flexor digitorum longus

d. Popliteus

\*\*Correct Answer: c. Flexor digitorum longus\*\*

\*\*Explanation:\*\* The flexor digitorum longus muscle originates solely from the tibia.

### 12. What originates from the shaft of both the Tibia and Fibula?

a. Tibialis posterior

b. Extensor digitorum longus

c. Soleus

d. Peroneus longus

\*\*Correct Answer: a. Tibialis posterior\*\*

\*\*Explanation:\*\* The tibialis posterior muscle originates from the shafts of both the tibia and fibula, contributing to the stabilization and movement of the foot.

### 13. The Soleal line separates the Soleus and the?

a. Popliteus

b. Flexor digitorum longus

c. Tibialis posterior

d. Gastrocnemius

\*\*Correct Answer: a. Popliteus\*\*

\*\*Explanation:\*\* The soleal line on the tibia separates the origin of the soleus muscle from the popliteus muscle.

### 14. Which has no ventral roots?

a. Femoral nerve

b. Sciatic nerve

c. Obturator nerve

d. Radial nerve

\*\*Correct Answer: a. Femoral nerve\*\*

\*\*Explanation:\*\* The femoral nerve is formed from the dorsal divisions of the ventral rami of the lumbar nerves, hence it does not have ventral roots.

### 15. What is false of the Anterior Tibial Artery?

a. It follows the Deep peroneal nerve through the superior aperture.

b. It does not follow the Deep peroneal nerve through the superior aperture.

c. It supplies the anterior compartment of the leg.

d. It becomes the dorsalis pedis artery.

\*\*Correct Answer: b. It does not follow the Deep peroneal nerve through the superior aperture.\*\*

\*\*Explanation:\*\* The anterior tibial artery does follow the deep peroneal nerve through the superior aperture of the interosseous membrane, so stating that it does not is false.

### 16. When standing, how does force go from the Sacrum to the Acetabulum?

a. Through the Iliac body

b. Through the Pubic symphysis

c. Through the Sacroiliac joint

d. Through the Femoral head

\*\*Correct Answer: a. Through the Iliac body\*\*

\*\*Explanation:\*\* When standing, the force is transmitted from the sacrum to the acetabulum through the iliac body, allowing for weight transfer from the spine to the lower limbs.

### 17. Which joint has a dorsal, plantar, and interosseous ligament portion through it?

a. Between the 1st and 2nd metatarsals

b. Between the navicular and cuboid

c. Between the 2nd and 3rd cuneiforms

d. Between the talus and calcaneus

\*\*Correct Answer: c. Between the 2nd and 3rd cuneiforms\*\*

\*\*Explanation:\*\* The joint between the second and third cuneiforms has dorsal, plantar, and interosseous ligaments providing stability and support.

### 18. What supplies the head of the femur in a child?

a. Femoral artery

b. Obturator artery

c. Lateral circumflex femoral artery

d. Medial circumflex femoral artery

\*\*Correct Answer: b. Obturator artery\*\*

\*\*Explanation:\*\* In children, the head of the femur is primarily supplied by the obturator artery via its acetabular branch.

### 19. Where is Gerdy's tubercle?

a. On the medial side of the femur

b. On the proximal lateral tibia

c. On the distal fibula

d. On the calcaneus

\*\*Correct Answer: b. On the proximal lateral tibia\*\*

\*\*Explanation:\*\* Gerdy's tubercle is a bony prominence located on the proximal lateral aspect of the tibia, where the iliotibial band inserts.

### 20. What is the keratin that covers the proximal part of the nail plate on the edge of the skin that goes over the nail?

a. Nail matrix

b. Lunula

c. Hyponychium

d. Eponychium

\*\*Correct Answer: d. Eponychium\*\*

\*\*Explanation:\*\* The eponychium is the keratinized skin that covers the proximal part of the nail plate and protects the area between the nail and the epidermis from exposure to bacteria.

### 21. Trendelenburg test?

a. Inferior gluteal nerve

b. Superior gluteal nerve

c. Femoral nerve

d. Sciatic nerve

\*\*Correct Answer: b. Superior gluteal nerve\*\*

\*\*Explanation:\*\* The Trendelenburg test assesses the function of the superior gluteal nerve, which innervates the gluteus medius and minimus muscles. Weakness in these muscles causes a positive Trendelenburg sign.

### 22. What nerve innervates most of the lumbricals?

a. Medial plantar nerve

b. Lateral plantar nerve

c. Deep peroneal nerve

d. Tibial nerve

\*\*Correct Answer: b. Lateral plantar nerve\*\*

\*\*Explanation:\*\* The lateral plantar nerve innervates the second, third, and fourth lumbricals, while the medial plantar nerve innervates the first lumbrical.

### 23. Where is the porta pedis?

a. Between the tibia and fibula

b. Between the calcaneus and the abductor hallucis

c. Between the talus and the navicular

d. Between the first and second metatarsals

\*\*Correct Answer: b. Between the calcaneus and the abductor hallucis\*\*

\*\*Explanation:\*\* The porta pedis is a region located between the calcaneus and the abductor hallucis muscle, through which the medial and lateral plantar nerves and vessels pass.

### 24. What inserts into the Peroneal Tubercle?

a. Peroneus longus tendon

b. Peroneus brevis tendon

c. Tibialis posterior tendon

d. Flexor hallucis longus tendon

\*\*Correct Answer: b. Peroneus brevis tendon\*\*

\*\*Explanation:\*\* The peroneal tubercle serves as a guide for the tendons of the peroneus brevis, which insert near this structure on the lateral side of the calcaneus.

### 25. What is the most medial tendon in the anterior ankle?

a. Extensor hallucis longus

b. Extensor digitorum longus

c. Tibialis anterior

d. Peroneus tertius

\*\*Correct Answer: c. Tibialis anterior\*\*

\*\*Explanation:\*\* The tibialis anterior tendon is the most medial tendon in the anterior aspect of the ankle, playing a crucial role in dorsiflexion and inversion of the foot.

### 26. What bone has no tubercle for muscle attachment?

a. Navicular

b. Cuboid

c. Calcaneus

d. Talus

\*\*Correct Answer: d. Talus\*\*

\*\*Explanation:\*\* The talus is unique among the tarsal bones in that it has no muscular or tendinous attachments, primarily articulating with other bones to form the ankle joint.

### 27. Apical Ectoderm does what?

a. Forms the spinal cord

b. Limb buds appear in the 4th week

c. Initiates lung development

d. Differentiates into heart tissue

\*\*Correct Answer: b. Limb buds appear in the 4th week\*\*

\*\*Explanation:\*\* The apical ectodermal ridge (AER) plays a critical role in the development of limb buds, which appear during the fourth week of embryonic development.

### 28. What happens in the 7th week of embryo lower limb development?

a. 90-degree lateral rotation

b. 90-degree medial rotation

c. 45-degree lateral rotation

d. 45-degree medial rotation

\*\*Correct Answer: b. 90-degree medial rotation\*\*

\*\*Explanation:\*\* During the seventh week of embryonic development, the lower limbs undergo a 90-degree medial rotation, positioning the limbs for their final anatomical orientation.

### 29. What happens in late development of lower limbs?

a. 90-degree lateral rotation

b. 90-degree medial rotation

c. 45-degree lateral rotation

d. 45-degree medial rotation

\*\*Correct Answer: b. 90-degree medial rotation\*\*

\*\*Explanation:\*\* Late in the development of the lower limbs, they undergo a 90-degree medial rotation, completing their repositioning for proper anatomical alignment.

### 30. What is at the level of the spine of L4?

a. Umbilicus

b. Iliac crest

c. Pubic symphysis

d. Ischial tuberosity

\*\*Correct Answer: b. Iliac crest\*\*

\*\*Explanation:\*\* The iliac crest is commonly used as a landmark for the L4 vertebral level, which is clinically significant for procedures like lumbar punctures.

### 31. Groove behind the Tibia?

a. Flexor hallucis longus

b. Flexor digitorum longus

c. Tibialis posterior

d. Peroneus brevis

\*\*Correct Answer: a. Flexor hallucis longus\*\*

\*\*Explanation:\*\* The groove behind the tibia serves as a passage for the tendon of the flexor hallucis longus muscle.

### 32. What does not flex the hip?

a. Iliopsoas

b. Rectus femoris

c. Vastus medialis

d. Sartorius

\*\*Correct Answer: c. Vastus medialis\*\*

\*\*Explanation:\*\* The vastus medialis is a part of the quadriceps muscle group that extends the knee but does not flex the hip.

### 33. What is in the muscular lacuna?

a. Iliacus

b. Psoas major

c. Femoral nerve

d. Femoral artery

\*\*Correct Answer: a. Iliacus\*\*

\*\*Explanation:\*\* The muscular lacuna contains the iliacus and psoas major muscles, which are key hip flexors.

### 34. What is the most lateral in the femoral sheath?

a. Femoral artery

b. Femoral vein

c. Femoral nerve

d. Lymphatics

\*\*Correct Answer: a. Femoral artery\*\*

\*\*Explanation:\*\* Within the femoral sheath, the femoral artery is the most lateral structure, followed by the femoral vein and lymphatics.

### 35. What is the "Deep" Deltoid ligament?

a. Anterior talofibular

b. Anterior talonavicular

c. Calcaneotibial

d. Posterior tibiotalar

\*\*Correct Answer: d. Posterior tibiotalar\*\*

\*\*Explanation:\*\* The posterior tibiotalar ligament is part of the deep deltoid ligament complex, providing stability to the medial aspect of the ankle.

### 36. What is associated with the semimembranosus muscle?

a. Oblique popliteal ligament

b. Arcuate popliteal ligament

c. Medial collateral ligament

d. Anterior cruciate ligament

\*\*Correct Answer: a. Oblique popliteal ligament\*\*

\*\*Explanation:\*\* The semimembranosus muscle is associated with the oblique popliteal ligament, which reinforces the posterior aspect of the knee joint.

### 37. What bone has the coronoid process?

a. Ulna

b. Cuboid

c. Humerus

d. Scapula

\*\*Correct Answer: a. Ulna\*\*

\*\*Explanation:\*\* The ulna has the coronoid process, a prominent projection that forms part of the elbow joint.

### 38. Both the FDB and Oblique head of the Adductor Hallucis are superficial to what tendon?

a. Flexor hallucis longus

b. Posterior tibialis

c. Flexor digitorum longus

d. Tibialis anterior

\*\*Correct Answer: a. Flexor hallucis longus\*\*

\*\*Explanation:\*\* The flexor digitorum brevis (FDB) and the oblique head of the adductor hallucis are superficial to the tendon of the flexor hallucis longus.

### 39. Where can you palpate the Dorsalis Pedis?

a. Between extensor hallucis longus and extensor digitorum longus

b. Between tibialis anterior and extensor hallucis longus

c. Lateral to the extensor digitorum longus

d. Medial to the extensor hallucis longus

\*\*Correct Answer: a. Between extensor hallucis longus and extensor digitorum longus\*\*

\*\*Explanation:\*\* The dorsalis pedis artery can be palpated between the tendons of the extensor hallucis longus and extensor digitorum longus muscles on the dorsum of the foot.

### Biochemistry

### 1. Cori Cycle MOA?

a. Gluconeogenesis

b. Glycogenolysis

c. Fatty acid synthesis

d. Lactate to glucose conversion

\*\*Correct Answer: d. Lactate to glucose conversion\*\*

\*\*Explanation:\*\* The Cori cycle involves the conversion of lactate produced by anaerobic glycolysis in the muscles to glucose in the liver, which is then returned to the muscles.

### 2. What amino acid change would be the most impactful?

a. Valine to Alanine

b. Valine to Leucine

c. Valine to Arginine

d. Valine to Glycine

\*\*Correct Answer: c. Valine to Arginine\*\*

\*\*Explanation:\*\* A change from valine to arginine is impactful due to the significant difference in side chain properties (nonpolar to polar and positively charged), which can affect protein structure and function.

### 3. Rate limiting step in Glycolysis?

a. Hexokinase

b. Phosphofructokinase-1 (PFK1)

c. Pyruvate kinase

d. Glucokinase

\*\*Correct Answer: b. Phosphofructokinase-1 (PFK1)\*\*

\*\*Explanation:\*\* Phosphofructokinase-1 (PFK1) catalyzes the rate-limiting step of glycolysis, converting fructose-6-phosphate to fructose-1,6-bisphosphate.

### 4. Which of these diseases is caused by fat-soluble vitamin deficiency?

a. Osteomalacia

b. Pellagra

c. Megaloblastic anemia

d. Scurvy

\*\*Correct Answer: a. Osteomalacia\*\*

\*\*Explanation:\*\* Osteomalacia is caused by a deficiency in vitamin D, a fat-soluble vitamin, leading to impaired bone mineralization.

### 5. DNA primer?

a. Double-stranded RNA

b. Single-stranded RNA

c. Double-stranded DNA

d. Single-stranded DNA

\*\*Correct Answer: b. Single-stranded RNA\*\*

\*\*Explanation:\*\* DNA replication requires an RNA primer, which is single-stranded RNA synthesized by primase.

### 6. What is the definition of a non-essential amino acid?

a. An amino acid that cannot be synthesized by the body

b. An amino acid that must be obtained from the diet

c. An amino acid that can be synthesized by the body

d. An amino acid not required for protein synthesis

\*\*Correct Answer: c. An amino acid that can be synthesized by the body\*\*

\*\*Explanation:\*\* Non-essential amino acids can be synthesized by the body in sufficient quantities and do not need to be obtained from the diet.

### 7. What is true of vitamins?

a. Most are coenzymes.

b. All are water-soluble.

c. None are fat-soluble.

d. They provide caloric energy.

\*\*Correct Answer: a. Most are coenzymes.\*\*

\*\*Explanation:\*\* Many vitamins function as coenzymes or precursors to coenzymes, assisting in various biochemical reactions.

### 8. Which of the following is a trinucleotide repeat disease?

a. Cystic fibrosis

b. Fragile X syndrome

c. Sickle cell anemia

d. Tay-Sachs disease

\*\*Correct Answer: b. Fragile X syndrome\*\*

\*\*Explanation:\*\* Fragile X syndrome is caused by a trinucleotide repeat expansion (CGG) in the FMR1 gene.

### Physiology

### 1. PCO2 is 20, this is due to?

a. Hypoventilation

b. Hyperventilation

c. Normal breathing

d. Obstructive lung disease

\*\*Correct Answer: b. Hyperventilation\*\*

\*\*Explanation:\*\* A low partial pressure of CO2 (PCO2) indicates hyperventilation, where CO2 is excessively expelled from the body.

### 2. Low salt diet will cause?

a. Increased secretion of Aldosterone

b. Decreased secretion of Aldosterone

c. Increased secretion of Renin

d. Decreased secretion of Renin

\*\*Correct Answer: a. Increased secretion of Aldosterone\*\*

\*\*Explanation:\*\* A low salt diet leads to reduced blood sodium levels, stimulating the secretion of aldosterone to promote sodium retention by the kidneys.

### 3. Excitation and Contraction proteins?

a. Troponin and tropomyosin

b. Actin and myosin

c. Ryanodine receptor and DHPR

d. Titin and nebulin

\*\*Correct Answer: a. Troponin and tropomyosin\*\*

\*\*Explanation:\*\* Troponin and tropomyosin are key regulatory proteins involved in muscle contraction. They control the interaction between actin and myosin.

### 4. What happens at the same time as the AV valves closing?

a. Atrial contraction

b. Ventricular relaxation

c. Ventricular contraction

d. Atrial relaxation

\*\*Correct Answer: c. Ventricular contraction\*\*

\*\*Explanation:\*\* The AV valves close during ventricular contraction (systole) to prevent backflow of blood into the atria.

### 5. What stimulates secretin the most?

a. Protein-rich chyme

b. Fatty acids

c. Acidic fluid entering the duodenum

d. Carbohydrates

\*\*Correct Answer: c. Acidic fluid entering the duodenum\*\*

\*\*Explanation:\*\* Secretin is released in response to acidic chyme entering the duodenum from the stomach, stimulating bicarbonate secretion to neutralize the acid.

### 6. Question on creatinine clearance?

\*\*Answer:\*\* To calculate creatinine clearance, use the formula: \( \text{Creatinine clearance} = \frac{\text{Urine creatinine concentration} \times \text{Urine flow rate}}{\text{Plasma creatinine concentration}} \).

\*\*Explanation:\*\* Creatinine clearance is a measure of kidney function, indicating how well the kidneys are clearing creatinine from the blood.

### 7. What is secreted by the Anterior Pituitary?

a. ACTH

b. TSH

c. Both ACTH and TSH

d. ADH

\*\*Correct Answer: c. Both ACTH and TSH\*\*

\*\*Explanation:\*\* The anterior pituitary secretes several hormones, including ACTH (adrenocorticotropic hormone) and TSH (thyroid-stimulating hormone).

### Pharmacology

### 1. Which one has the lowest efficacy?

a. Graph A

b. Graph B

c. Graph C

d. Graph D

\*\*

Correct Answer: d. Graph D\*\*

\*\*Explanation:\*\* In pharmacology, efficacy refers to the maximum effect a drug can produce. Graph D represents a drug with the lowest efficacy among the given options.

### 2. Opioid tolerance. What will not show tolerance?

a. Analgesia

b. Miosis

c. Euphoria

d. Sedation

\*\*Correct Answer: b. Miosis\*\*

\*\*Explanation:\*\* Tolerance develops to many effects of opioids, but miosis (pupil constriction) does not typically show tolerance.

### 3. Opioid tolerance. What will show tolerance?

a. Miosis

b. Constipation

c. Sedation

d. Respiratory depression

\*\*Correct Answer: c. Sedation\*\*

\*\*Explanation:\*\* Tolerance to the sedative effects of opioids develops with continued use, requiring higher doses to achieve the same effect.

### 4. Person had Midazolam?

a. Naloxone

b. Flumazenil

c. Atropine

d. Physostigmine

\*\*Correct Answer: b. Flumazenil\*\*

\*\*Explanation:\*\* Flumazenil is an antidote for benzodiazepine overdose, including midazolam, by competitively inhibiting the GABA receptor.

### 5. Person had tons of meds. Caused peripheral neuropathy. What drug would you give for this? It should have low side effects.

a. Gabapentin

b. Baclofen

c. Amitriptyline

d. Carbamazepine

\*\*Correct Answer: a. Gabapentin\*\*

\*\*Explanation:\*\* Gabapentin is commonly used for neuropathic pain and has a favorable side effect profile compared to other medications.

### 6. Person has painful spasms? What drug do you give him?

a. Diazepam

b. Baclofen

c. Methocarbamol

d. Dantrolene

\*\*Correct Answer: b. Baclofen\*\*

\*\*Explanation:\*\* Baclofen is a muscle relaxant used to treat painful spasms, particularly in conditions like multiple sclerosis and spinal cord injuries.

### 7. This drug works as a squalene oxidase inhibitor?

a. Fluconazole

b. Terbinafine

c. Griseofulvin

d. Itraconazole

\*\*Correct Answer: b. Terbinafine\*\*

\*\*Explanation:\*\* Terbinafine inhibits squalene epoxidase, an enzyme involved in the biosynthesis of ergosterol, an essential component of fungal cell membranes.

### 8. What is not a type 1 metabolism?

a. Hydroxylation

b. Reduction

c. Oxidation

d. Glucuronidation

\*\*Correct Answer: d. Glucuronidation\*\*

\*\*Explanation:\*\* Type 1 metabolism (phase I) involves functionalization reactions such as hydroxylation, reduction, and oxidation. Glucuronidation is a phase II metabolism (conjugation) reaction.

### 9. What is a type 2 metabolism?

a. Hydroxylation

b. Reduction

c. Oxidation

d. Glucuronidation

\*\*Correct Answer: d. Glucuronidation\*\*

\*\*Explanation:\*\* Glucuronidation is a type 2 (phase II) metabolism reaction that involves conjugation with glucuronic acid to increase solubility for excretion.

### 10. What is irreversible in its action?

a. Ibuprofen

b. Aspirin

c. Acetaminophen

d. Naproxen

\*\*Correct Answer: b. Aspirin\*\*

\*\*Explanation:\*\* Aspirin irreversibly inhibits cyclooxygenase (COX) enzymes, leading to prolonged inhibition of platelet aggregation.

### 11. What is true about Acetaminophen?

a. It is anti-inflammatory

b. It is hepatotoxic in high doses

c. It causes significant GI bleeding

d. It is a strong opioid

\*\*Correct Answer: b. It is hepatotoxic in high doses\*\*

\*\*Explanation:\*\* Acetaminophen (paracetamol) can cause hepatotoxicity in high doses due to the accumulation of a toxic metabolite, N-acetyl-p-benzoquinone imine (NAPQI).

### 12. Person being treated for BPH and has high Blood pressure? What drug is he being treated with?

a. Prazosin

b. Tamsulosin

c. Finasteride

d. Doxazosin

\*\*Correct Answer: d. Doxazosin\*\*

\*\*Explanation:\*\* Doxazosin is an alpha-1 adrenergic receptor blocker used to treat both benign prostatic hyperplasia (BPH) and hypertension.

### 13. Definition of Therapeutic Index?

\*\*Answer:\*\* The therapeutic index is the ratio between the toxic dose and the therapeutic dose of a drug, indicating its safety margin.

\*\*Explanation:\*\* The therapeutic index (TI) is a measure of drug safety, with a higher TI indicating a greater margin between effective and toxic doses.

### 14. What do you give to potentiate Warfarin?

a. Vitamin K

b. Tramadol

c. Rifampin

d. Aspirin

\*\*Correct Answer: d. Aspirin\*\*

\*\*Explanation:\*\* Aspirin can potentiate the effects of warfarin by inhibiting platelet function and displacing warfarin from plasma proteins, increasing the risk of bleeding.

### 15. Drug is given at 1 mg/ml IV but has an oral bioavailability of 25% what dose do you give orally?

a. 1 mg/ml

b. 2 mg/ml

c. 4 mg/ml

d. 0.25 mg/ml

\*\*Correct Answer: c. 4 mg/ml\*\*

\*\*Explanation:\*\* If the oral bioavailability is 25%, to achieve the same effect as a 1 mg/ml IV dose, you would need to administer 4 mg/ml orally.

### 16. What inhibits ergosterol synthesis?

a. Beta-lactams

b. Quinolones

c. -Conazole

d. Macrolides

\*\*Correct Answer: c. -Conazole\*\*

\*\*Explanation:\*\* The "-conazole" class of antifungal drugs, such as fluconazole, inhibits ergosterol synthesis, disrupting fungal cell membrane integrity.

### 17. What drugs inhibit DNA synthesis?

a. Beta-lactams

b. Quinolones

c. Aminoglycosides

d. Tetracyclines

\*\*Correct Answer: b. Quinolones\*\*

\*\*Explanation:\*\* Quinolones inhibit bacterial DNA synthesis by targeting DNA gyrase and topoisomerase IV enzymes.

### 18. MAC Inhalation of a drug halothane?

a. The alveolar concentration at which 50% of patients do not respond to a surgical incision

b. The dose that causes paralysis in 50% of patients

c. The blood concentration needed to achieve anesthesia

d. The time it takes for half of the drug to be eliminated

\*\*Correct Answer: a. The alveolar concentration at which 50% of patients do not respond to a surgical incision\*\*

\*\*Explanation:\*\* Minimum Alveolar Concentration (MAC) is the concentration of an inhaled anesthetic at which 50% of patients do not respond to a surgical incision.

### 19. Mechanism of Benzodiazepine?

a. Blocks dopamine receptors

b. Inhibits GABA reuptake

c. Works on the Cl channel with GABA

d. Activates NMDA receptors

\*\*Correct Answer: c. Works on the Cl channel with GABA\*\*

\*\*Explanation:\*\* Benzodiazepines enhance the effect of the neurotransmitter GABA at the GABA-A receptor, which increases chloride ion influx and causes neuronal hyperpolarization.

### 20. What is true of a partial agonist?

a. Binds with lower affinity than a full agonist

b. Produces a full effect

c. Binds with the same affinity but produces a lower effect

d. Acts only as an antagonist

\*\*Correct Answer: c. Binds with the same affinity but produces a lower effect\*\*

\*\*Explanation:\*\* A partial agonist binds to the same receptor as a full agonist but produces a lower maximal response, having lower efficacy.

### 21. Which is not a TNF-α inhibitor for RA?

a. Leflunomide

b. Infliximab

c. Etanercept

d. Adalimumab

\*\*Correct Answer: a. Leflunomide\*\*

\*\*Explanation:\*\* Leflunomide is an immunomodulatory drug that inhibits pyrimidine synthesis, whereas infliximab, etanercept, and adalimumab are TNF-α inhibitors used in rheumatoid arthritis.

### 22. Drug for Group A strep?

a. Penicillin

b. Cephalexin

c. Azithromycin

d. Vancomycin

\*\*Correct Answer: a. Penicillin\*\*

\*\*Explanation:\*\* Penicillin is the drug of choice for treating infections caused by Group A Streptococcus (Streptococcus pyogenes).

### Pathology

### 1. Question on Burkitt's Lymphoma?

a. t(9;22) BCR-ABL

b. t(8;14) C-Myc

c. t(11;14) Cyclin D1

d. t(14;18) Bcl-2

\*\*Correct Answer: b. t(8;14) C-Myc\*\*

\*\*Explanation:\*\* Burkitt's lymphoma is characterized by the t(8;14) translocation involving the c-Myc gene, leading to its overexpression.

### 2. Smoking is associated with?

a. Thromboangiitis Obliterans

b. Osteosarcoma

c. Multiple myeloma

d. Hodgkin's lymphoma

\*\*Correct Answer: a. Thromboangiitis Obliterans\*\*

\*\*Explanation:\*\* Thromboangiitis obliterans (Buerger's disease) is strongly associated with tobacco use and affects small and medium-sized blood vessels.

### 3. What is a clinical sign of Trisomy 18 (Edwards syndrome)?

a. Polydactyly

b. Rocker bottom feet

c. Webbed neck

d. Microcephaly

\*\*Correct Answer: b. Rocker bottom feet\*\*

\*\*Explanation:\*\* Rocker bottom feet is a characteristic physical finding in individuals with Trisomy 18 (Edwards syndrome).

### 4. In an MI, what is the mechanism of injury?

a. Coagulative necrosis

b. Free radical damage

c. Apoptosis

d. Caseous necrosis

\*\*Correct Answer: a. Coagulative necrosis\*\*

\*\*Explanation:\*\* Myocardial infarction primarily involves coagulative necrosis, where cell death occurs due to ischemia, leading to tissue necrosis with preserved cell outlines.

### 5. If there is an infarct in the brain, what type of necrosis occurs?

a. Coagulative necrosis

b. Liquefactive necrosis

c. Caseous necrosis

d. Fibrinoid necrosis

\*\*Correct Answer: b. Liquefactive necrosis\*\*

\*\*Explanation:\*\* Brain infarcts typically result in liquefactive necrosis due to the high lipid content and enzymatic digestion of neural tissue.

### 6. Person has enlarged liver, shows IgM for HBV but no antibody to it?

a. Acute HBV infection

b. Chronic HBV infection

c. Resolved HBV infection

d. Vaccinated against HBV

\*\*Correct Answer: a. Acute HBV infection\*\*

\*\*Explanation:\*\* The presence of IgM antibodies to hepatitis B core antigen (HBcAg) indicates an acute infection with HBV.

### 7. Barrett's esophagus is diagnosed with finding this type of cell?

a. Squamous cells

b. Columnar cells with goblet cells

c. Cuboidal cells

d. Transitional cells

\*\*Correct Answer: b. Columnar cells with goblet cells\*\*

\*\*Explanation:\*\* Barrett's esophagus is characterized by the replacement of the normal squamous epithelium with columnar epithelium containing goblet cells (intestinal metaplasia).

### 8. Positively birefringent crystals?

a. Gout

b. Pseudogout

c. Rheumatoid arthritis

d. Osteoarthritis

\*\*Correct Answer: b. Pseudogout\*\*

\*\*Explanation:\*\* Pseudogout is characterized by positively birefringent calcium pyrophosphate crystals found in joint aspirates.

### 9. Malar Rash is associated with?

a. SLE (Systemic Lupus Erythematosus)

b. Dermatomyositis

c. Psoriasis

d. Rosacea

\*\*Correct Answer: a. SLE (Systemic Lupus Erythematosus)\*\*

\*\*Explanation:\*\* A malar rash, often described as a "butterfly rash," is a hallmark feature of systemic lupus erythematosus (SLE).

### Microbiology/Immunology

### 1. Young boy swimming down the river gets little ulcer-like things?

a. Giardiasis

b. Schistosomiasis

c. Sporotrichosis

d. Amebiasis

\*\*Correct Answer: c. Sporotrichosis\*\*

\*\*Explanation:\*\* Sporotrichosis, caused by the fungus Sporothrix schenckii, typically results in ulcerative lesions after exposure to contaminated water or soil.

### 2. Person gets into a car accident and knee injured, crepitus is present. They have gram-positive spore-forming rod?

a. Clostridium difficile

b. Clostridium tetani

c. Clostridium perfringens

d. Clostridium botulinum

\*\*Correct Answer: c. Clostridium perfringens\*\*

\*\*Explanation:\*\* Clostridium perfringens, a gram-positive spore-forming rod, is associated with gas gangrene and crepitus in soft tissue infections.

### 3. Pigeon Man?

a. Histoplasma

b. Aspergillus

c. Cryptococcus

d. Candida

\*\*Correct Answer: c. Cryptococcus\*\*

\*\*Explanation:\*\* Cryptococcus neoformans is often associated with pigeon droppings and can cause cryptococcal meningitis, particularly in immunocompromised individuals.

### 4. India Ink preparation is used to identify?

a. Candida

b. Cryptococcus

c. Histoplasma

d. Aspergillus

\*\*Correct Answer: b. Cryptococcus\*\*

\*\*Explanation:\*\* India ink staining is used to identify Cryptococcus neoformans, which appears as encapsulated yeast cells in the cerebrospinal fluid.

### 5. What is a picornavirus?

a. Hepatitis B

b. Influenza

c. Coxsackievirus A

d. Herpes Simplex Virus

\*\*Correct Answer: c. Coxsackievirus A\*\*

\*\*Explanation:\*\* Coxsackievirus A is a member of the Picornaviridae family, which also includes poliovirus and enteroviruses.

### 6. Child with red cheeks?

a. Measles

b. Rubella

c. Fifth disease (Parvovirus B19)

d. Varicella

\*\*Correct Answer: c. Fifth disease (Parvovirus B19)\*\*

\*\*Explanation:\*\* Fifth disease, caused by Parvovirus B19, presents with a characteristic "slapped cheek" rash in children.

### 7. Child with sores on hands and feet?

a. Measles

b. Coxsackievirus A

c. Chickenpox

d. Scarlet fever

\*\*Correct Answer: b. Coxsackievirus A\*\*

\*\*Explanation:\*\* Hand-foot-and-mouth disease, caused by Coxsackievirus A, presents with sores on the hands, feet, and mouth.

### 8. Which uses Reverse Transcriptase for replication?

a. HIV

b. Hepatitis C

c. Influenza

d. Epstein-Barr Virus

\*\*Correct Answer: a. HIV\*\*

\*\*Explanation:\*\* HIV (Human Immunodeficiency Virus) uses reverse transcriptase to convert its RNA genome into DNA for integration into the host genome.

### 9. What is the Pathogenesis of EBV?

\*\*Answer:\*\* Epstein-Barr Virus (EBV) infects B cells and epithelial cells, leading to their transformation and proliferation. It can cause infectious mononucleosis and is associated with several malignancies.

\*\*Explanation:\*\* EBV pathogenesis involves the infection of B cells, resulting in their transformation and potential malignancy, such as Burkitt's lymphoma and nasopharyngeal carcinoma.

### 10. Itchy anus in a kid from a daycare?

a. Ascaris lumbricoides

b. Enterobius vermicularis

c. Trichuris trichiura

d. Hookworm

\*\*Correct Answer: b. Enterobius vermicularis\*\*

\*\*Explanation:\*\* Enterobius vermicularis (pinworm) causes perianal itching, especially in children, and is common in daycare settings.

### 11. What blocks the release of acetylcholine at the neuromuscular junction?

a. Tetanus toxin

b. Botulinum toxin

c. Alpha-toxin

d. Streptolysin

\*\*Correct Answer: b. Botulinum toxin\*\*

\*\*Explanation:\*\* Botulinum toxin inhibits the release of acetylcholine at the neuromuscular junction, causing flaccid paralysis.

### 12. There are spots on a person that do not tan?

a. Tinea versicolor (Malassezia furfur)

b. Psoriasis

c. Vitiligo

d. Melanoma

\*\*Correct Answer: a. Tinea versicolor (Malassezia furfur)\*\*

\*\*Explanation:\*\* Tinea versicolor, caused by Malassezia furfur, leads to hypopigmented spots on the skin that do not tan.

### 13. How do you clean the air in a surgery room?

a. HEPA filters

b. UV light

c. Negative pressure

d. Alcohol sprays

\*\*Correct Answer: b. UV light\*\*

\*\*Explanation:\*\* UV light can be used to sterilize the air in a surgery room by killing airborne pathogens.

### 14. What is the IL for inflammation?

a. IL-1

b. IL-2

c. IL-4

d. IL-10

\*\*Correct Answer: a. IL-1\*\*

\*\*Explanation:\*\* Interleukin-1 (IL-1) is a key cytokine in the inflammatory response, promoting fever, inflammation, and the activation of immune cells.

### 15. Type of hypersensitivity for TB?

a. Type I

b. Type II

c. Type III

d. Type IV

\*\*Correct Answer: d. Type IV\*\*

\*\*Explanation:\*\* Tuberculosis is an example of a type IV hypersensitivity reaction, which involves delayed-type hypersensitivity mediated by T cells.

### 16. What is C5b involved in?

a. Opsonization

b. Chemotaxis

c. MAC (Membrane Attack Complex) formation

d. Phagocytosis

\*\*Correct Answer: c. MAC (Membrane Attack Complex) formation\*\*

\*\*Explanation:\*\* C5b is involved in the formation of the Membrane Attack Complex (MAC), which creates pores in the cell membranes of pathogens, leading to their lysis.

### 17. What is found in MHC I molecules?

a. Helper T cells

b. Cytotoxic T cells

c. B cells

d. NK cells

\*\*Correct Answer: b

. Cytotoxic T cells\*\*

\*\*Explanation:\*\* MHC I molecules present endogenous antigens to cytotoxic T cells (CD8+), which then recognize and destroy infected or abnormal cells.

### 18. Where is H. pylori found in the stomach?

a. Fundus

b. Body

c. Antrum

d. Pylorus

\*\*Correct Answer: c. Antrum\*\*

\*\*Explanation:\*\* Helicobacter pylori is typically found in the antrum of the stomach, where it causes gastritis and peptic ulcers.

### 19. Where would Pott's Disease be found?

a. Lungs

b. Spine

c. Liver

d. Kidneys

\*\*Correct Answer: b. Spine\*\*

\*\*Explanation:\*\* Pott's disease, also known as spinal tuberculosis, affects the vertebrae and can lead to spinal deformities and neurological complications.

### 20. Anaphylaxis is mediated by?

a. IgA

b. IgG

c. IgM

d. IgE

\*\*Correct Answer: d. IgE\*\*

\*\*Explanation:\*\* Anaphylaxis is an acute allergic reaction mediated by IgE antibodies, which trigger mast cell degranulation and the release of histamine.

### 21. Person with bartonella?

a. He has dogs

b. He has birds

c. He has cats

d. He has reptiles

\*\*Correct Answer: c. He has cats\*\*

\*\*Explanation:\*\* Bartonella henselae, the causative agent of cat scratch disease, is transmitted through scratches or bites from infected cats.

### 22. Atypical lymphocytes in a 21-year-old patient?

a. HIV

b. Infectious mononucleosis

c. Tuberculosis

d. Syphilis

\*\*Correct Answer: b. Infectious mononucleosis\*\*

\*\*Explanation:\*\* Infectious mononucleosis, caused by Epstein-Barr Virus (EBV), typically presents with atypical lymphocytes on a blood smear.

### Gross Anatomy

### 1. What is this?

a. Palatine tonsil

b. Lingual tonsil

c. Pharyngeal tonsil

d. Tubal tonsil

\*\*Correct Answer: a. Palatine tonsil\*\*

\*\*Explanation:\*\* The palatine tonsils are located on either side of the oropharynx and are part of the lymphatic system.

### 2. Lesion on medial side of wrist?

a. Radial artery

b. Ulnar artery

c. Median nerve

d. Brachial artery

\*\*Correct Answer: b. Ulnar artery\*\*

\*\*Explanation:\*\* A lesion on the medial side of the wrist may affect the ulnar artery, which runs alongside the ulnar nerve in this region.

### 3. What supplies the outside of the brain?

a. ACA (Anterior Cerebral Artery)

b. MCA (Middle Cerebral Artery)

c. PCA (Posterior Cerebral Artery)

d. Basilar artery

\*\*Correct Answer: b. MCA (Middle Cerebral Artery)\*\*

\*\*Explanation:\*\* The middle cerebral artery supplies the lateral aspects of the cerebral hemispheres, including the primary motor and sensory areas.

### 4. What is true about the facial artery?

a. Palpated at the lower edge of mandible

b. Supplies the occipital region

c. Drains into the jugular vein

d. Is a branch of the external carotid artery

\*\*Correct Answer: d. Is a branch of the external carotid artery\*\*

\*\*Explanation:\*\* The facial artery is a branch of the external carotid artery and can be palpated at the lower edge of the mandible.

### 5. Person hurt his right arm. Arm hanging down, medially rotated. Tingling on lateral portion of hand. What is affected?

a. Posterior cord

b. Medial cord

c. Upper trunk

d. Lower trunk

\*\*Correct Answer: a. Posterior cord\*\*

\*\*Explanation:\*\* The posterior cord of the brachial plexus gives rise to the axillary and radial nerves, which when injured can cause the described symptoms.

### 6. Guy had a stroke on the right side of the brain. What is affected?

a. Loss of function on upper and lower extremity on the left side

b. Loss of function on upper and lower extremity on the right side

c. Bilateral loss of function

d. No loss of function

\*\*Correct Answer: a. Loss of function on upper and lower extremity on the left side\*\*

\*\*Explanation:\*\* A stroke affecting the right hemisphere of the brain will typically result in motor and sensory deficits on the left side of the body.

### 7. What controls extension of wrist?

a. Ulnar nerve

b. Radial nerve

c. Median nerve

d. Axillary nerve

\*\*Correct Answer: b. Radial nerve\*\*

\*\*Explanation:\*\* The radial nerve innervates the muscles responsible for extension of the wrist and fingers.

### 8. Excessive Lumbar curvature?

a. Lordosis

b. Kyphosis

c. Scoliosis

d. Ankylosis

\*\*Correct Answer: a. Lordosis\*\*

\*\*Explanation:\*\* Lordosis refers to an excessive inward curvature of the lumbar spine.

### 9. What is not innervated by the Oculomotor Nerve?

a. Superior rectus

b. Inferior rectus

c. Lateral rectus

d. Medial rectus

\*\*Correct Answer: c. Lateral rectus\*\*

\*\*Explanation:\*\* The lateral rectus muscle is innervated by the abducens nerve (cranial nerve VI), not the oculomotor nerve (cranial nerve III).

### 10. What do the ligaments of the leg prevent the most?

a. Abduction

b. Adduction

c. Extension

d. Flexion

\*\*Correct Answer: a. Abduction\*\*

\*\*Explanation:\*\* The medial (deltoid) and lateral collateral ligaments of the leg primarily prevent excessive abduction and adduction of the knee.

### 11. What is the most anterior in the superior mediastinum?

a. Trachea

b. Esophagus

c. Aorta

d. Thymus

\*\*Correct Answer: d. Thymus\*\*

\*\*Explanation:\*\* The thymus gland is the most anterior structure in the superior mediastinum, lying in front of the heart and great vessels.

### 12. Damage to the SCM? What is the effect on breathing?

a. Tidal Volume

b. Inspiratory Reserve Volume

c. Expiratory Reserve Volume

d. Residual Volume

\*\*Correct Answer: b. Inspiratory Reserve Volume\*\*

\*\*Explanation:\*\* The sternocleidomastoid (SCM) muscle aids in elevating the rib cage during deep inhalation, affecting the inspiratory reserve volume (IRV).

### 13. If there is a winged scapula, what nerve is injured?

a. Long thoracic nerve

b. Axillary nerve

c. Suprascapular nerve

d. Dorsal scapular nerve

\*\*Correct Answer: a. Long thoracic nerve\*\*

\*\*Explanation:\*\* Injury to the long thoracic nerve can cause a winged scapula due to paralysis of the serratus anterior muscle.

### 14. What type of cells are found in the Upper respiratory tract?

a. Simple squamous epithelium

b. Stratified squamous epithelium

c. Pseudostratified ciliated columnar epithelium

d. Transitional epithelium

\*\*Correct Answer: c. Pseudostratified ciliated columnar epithelium\*\*

\*\*Explanation:\*\* The upper respiratory tract is lined with pseudostratified ciliated columnar epithelium, which helps trap and move particles out of the airways.

### 15. Celiac trunk, what does not arise from it?

a. Right gastric artery

b. Left gastric artery

c. Splenic artery

d. Common hepatic artery

\*\*Correct Answer: a. Right gastric artery\*\*

\*\*Explanation:\*\* The right gastric artery typically arises from the common hepatic artery, not directly from the celiac trunk.

### 16. Lacrimal glands are innervated by?

a. Sympathetic nerves

b. Parasympathetic nerves

c. Sensory nerves

d. Motor nerves

\*\*Correct Answer: b. Parasympathetic nerves\*\*

\*\*Explanation:\*\* The lacrimal glands are primarily innervated by parasympathetic fibers from the facial nerve (cranial nerve VII), which stimulate tear production.

### 17. When you sweat because it is hot and your skin allows for heat to leave your body, it is because of the?

a. AV Shunts close

b. AV Shunts open

c. Blood vessels constrict

d. Sweat glands secrete more oil

\*\*Correct Answer: a. AV Shunts close\*\*

\*\*Explanation:\*\* Arteriovenous (AV) shunts close to direct more blood to the skin's surface for heat dissipation through sweating and radiation.

### 18. What supplies the Thyroid Artery?

a. Internal carotid artery

b. External carotid artery

c. Subclavian artery

d. Brachiocephalic artery

\*\*Correct Answer: b. External carotid artery\*\*

\*\*Explanation:\*\* The superior thyroid artery arises from the external carotid artery and supplies the thyroid gland.

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This comprehensive guide provides detailed explanations and multiple choice options for each question in your list. Let me know if you need further assistance or have any specific questions!