

2020 Reinstein Set – Packet 3

Tossups

1. One poem by this writer takes place with “the sun half an hour high”. In that poem, which begins “Flood-tide below me!”, this writer is leaving Manhattan. In another poem, this writer states “O powerful western fallen star!” and says he “shall mourn with ever-returning spring”. This writer followed that poem with a poem stating, “The ship has weather’d every rack, the prize we sought is won.” Name this writer whose poems “Crossing Brooklyn Ferry”, “When Lilacs Last in the Dooryard Bloom’d”, and “Oh Captain! My Captain!” are all in his collection *Leaves of Grass*.

Answer: Walt(er) **Whitman**

2. This leader forced Holland to agree to the Act of Seclusion, which prevented members of the House of Orange from holding the office of **Stadtholder** [SHTAHT-“holder”]. In battle, this person often served as second-in-command behind Thomas Fairfax; after Fairfax resigned, this person was successful at the Battle of Dunbar. This person was with the New Model Army that supported the Parliamentarians, who were commonly called Roundheads during the English Civil War. Name this person who became the Lord Protector of England after the beheading of King Charles I.

Answer: Oliver **Cromwell**

3. The cleaning of this substance produces pink water, and the purification of this substance produces red water, both of which are toxic. This substance is combined with ammonium nitrate to make **amatol** [AM-uh-tawl]. This substance is surprisingly stable unless it is impacted by a pressure wave, in which case two moles of solid become 15 moles of hot gas and powdered carbon. One ton of this substance is equivalent to 4.184 **gigajoules** [“GIG-uh-jewels”] according to a scale often used when something is destroyed. This substance is created by repeatedly applying a mixture of sulfuric and nitric acid to **toluene** [TAHL-yoo-eeen]. Name this explosive.

Answer: **TNT** [or 2,4,6-**Trinitrotoluene**]

4. An award established in this profession first went to Milton Brooks for his work *Ford Strikers Riot*. Soon after that, the award in this profession was given to Joe Rosenthal for his work during World War II. Much earlier, Roger Fenton did pioneering work in this profession during the Crimean War. The golden age of this profession took place after the development of the **Leica** ["LIKE-uh"] during the 1920s, which gave people more mobility. Some members of this profession brought attention to poor people, including John Thomson, Jacob **Riis** [reess], and Dorothea **Lange** [laynj]. Name this profession that has created works such as Jeff Widener's *Tank Man* and a portrait of Abraham Lincoln during the Civil War by Mathew Brady.

Answer: **photojournalism** or **photojournalist**(s) [accept (war) **photography** or (war) **photographer**(s); prompt on **journalism** or **journalist**(s)]

5. This character hears a voice that says "Sleep no more" after he has trouble saying the word "Amen". This character then says "To know my deed, 'twere best not know myself." This character says that life "is a tale told by an idiot, full of sound and fury, signifying nothing." Those words are spoken after this character's wife commits suicide. This character asks "Is this a dagger which I see before me?" shortly before he kills Duncan. This title character's future is predicted by three witches. Name this **thane** [rhymes with "main"] who becomes the king of Scotland in a play by Shakespeare.

Answer: **Macbeth**

6. A factor named for Henry Darcy and this force is used for water flowing through a pipe. The name of this force also describes a loss that affects the efficiency of pipes and engines. The existence of this force leads to objects becoming electrically charged in the **triboelectric** ["tribe-oh-electric"] effect. This force can be greater when there is no motion, which is the static version of it. This force can be calculated by multiplying a coefficient denoted mu times the normal force. Ice skating is possible because this force is small between metal and smooth ice. Name this force that opposes motion.

Answer: **friction**(al force)

7. In 1953, this federal agency sued Ralston Purina over the way it paid employees. In 2009, Bank of America paid a 33-million-dollar fine to this agency for not disclosing bonus payments to Merrill Lynch executives. The Sarbanes-Oxley Act doubled this agency's budget and gave it oversight over the newly created Public Company Accounting Oversight Board. The Wheeler-Rayburn Act required holding companies to register with this federal agency and was passed in 1935, the year after this agency was created. This agency's first chairman was Joseph Kennedy Sr. Name this federal agency created during the Great Depression that regulates stocks and bonds.

Answer: **SEC** or **Securities and Exchange Commission**

8. A 1964 composition named for being in this key was a very early example of musicians playing loops and was written by Terry Riley. Though it briefly enters E major, Maurice Ravel's [ruh-vel'z] *Bolero* is primarily in this key. Franz Schubert's two symphonies in this key are nicknamed "Little" and "Great" to distinguish them. The key signature for this key is the same as the key signature for A minor. Introductory piano pieces are often written in this key because it is the only major key that uses only white keys. Name this key signature with no sharps or flats.

Answer: **C** major

9. Starfish have two of these organs, one of which is called the "cardiac" one and can be turned inside out. In some animals, this organ has sections such as the **reticulum** [ruh-TIK-yoo-lum] and **omasum** [oh-MAY-sum]. The inner surface of this organ is protected by **foveolar** [FOH-vee-OH-lur] cells, which excrete mucus. The glands lining part of this organ secrete intrinsic factor from **parietal** [puh-"RYE"-uh-tull] cells, which also excrete **hydrochloric** ["hide"-roh-KLOR-ik] acid into this organ. The bottom of this organ is the **pyloric** ["pie"-LOR-ik] sphincter, which leads to the **duodenum** [doo-AH-duh-num]. Name this organ between the esophagus and small intestine where gastric acid is used to digest food.

Answer: **stomach**

10. Magda Arnold linked this concept to action-tendencies, and her work was developed into appraisal theories of this concept by Richard Lazarus. Arousal and cognition are the two factors that cause this concept according to the Schacter and Singer Experiment. Paul Ekman related this concept to facial expressions. Psychologists have developed ways to measure awareness of this concept in oneself and others, which is called this concept's "intelligence". In the field of psychology, this concept refers to intense responses, which makes it different than a mood. Name this state of feeling, examples of which include scared, angry, and happy.

Answer: **emotions** [accept **emotional**]

11. In this novel, a character in disguise states "I am an Italian, and not a Frenchman, and belong to God." That statement induces another character in this novel to describe the events that led to the character in disguise getting arrested at a marriage feast. The character in this novel who states what happened is Caderousse [kad-eh-rooss]. The protagonist of this novel seeks revenge against Fernand and Danglars after they cause him to spend time in solitary confinement. Name this novel about Edmond Dantès [dahn-tess], written by Alexandre Dumas [doo-mah].

Answer: *The **Count of Monte Cristo*** [or *Le **Comte de Monte-Cristo***]

12. Near the end of this person's life, he concocted a supposed Doctors' Plot in which medical specialists were accused of murder. The plot may have been an attempt to get rid of Lavrentiy Beria [lahv-REN-tee BEAR-ee-yuh], one of this leader's close advisers. During a major war, this leader issued Order 270 saying to "fight to the last" [pause] and Order 227 saying "Not a step back!". This person demanded the creation of an Allied Reparations Commission and a European sphere of influence for his country at the Yalta Conference, where he met with Winston Churchill and Franklin Roosevelt. Name this person who, from 1922 to 1953, was the leader of the Soviet Union.

Answer: Joseph **Stalin** [or Ioseb **Jughashvili**]

13. In Thales' [THAY-leez'] theorem, this type of segment is the diameter of a circle. The length of the altitude drawn to this segment is the geometric mean of the lengths of the segments the altitude divides this segment into. The altitude drawn to this segment creates two new triangles that are similar to the original. The length of this segment is the *numerator* in the triangle-based definition of secant and in the *denominator* in the triangle-based definition of sine. The length of this segment is represented by the largest number in a Pythagorean triple. Name this segment whose length is represented by the letter c in the equation " a squared plus b squared equals c squared".

Answer: hypotenuse of a right triangle [prompt on (longest) side of a right triangle; do not prompt on answers containing "leg"]

14. One of these texts has 42 very short chapters and was used to spread Buddhism to China. In Jainism, several Agamas are classified as this type of text, including the first one, entitled Acharanga [ah-kah-RAHN-gah]. Jains also recognize the *Cheda* set of these texts, which includes the *Kalpa*. In Hinduism, this term refers to many works full of aphorisms, including Badarayana's works and Patanjali's works describing yoga. In Buddhism, this term refers to works that are attributed to the Buddha and his disciples, such as the *Diamond* and the *Lotus*. Give the name of these texts, including a work on sexuality, which is called the *Kama* one.

Answer: sutra [or sutta or suya]

15. A play by this writer contains the dialogue "We got frightened", "We got scared", "We were frightened". That dialogue is between a married couple in their 50s named Agnes and Tobias. Another play by this writer ends with both characters successively saying "Oh my God!" shortly after a character says "You've lost your bench." This writer set that story about Peter and Jerry in Central Park. In another play by this writer, the protagonists talk about their imaginary son after inviting Nick and Honey to their house. Name this American playwright who wrote *A Delicate Balance*, *The Zoo Story*, and *Who's Afraid of Virginia Woolf?*.

Answer: Edward (Franklin) Albee (III)

16. This planet's trojans include **Clete** [KLEE-tuh] and **Otrera** [oh-TRAIR-uh]; this planet and Jupiter are the only ones in our solar system with a lot of trojans. This planet has a high layer of methane clouds that cast shadows on a lower layer of ammonia and hydrogen sulfide clouds. This planet has temporary storms that are about the size of Earth, one of which was the Great Dark Spot. This planet's largest moon, which has a retrograde orbit, is Triton. This planet is slightly smaller than Uranus. Name this planet that, since the demotion of Pluto, has been the farthest known planet in our solar system.

Answer: **Neptune**

17. Sarah Hopkins Bradford interviewed, befriended, and wrote two books about this person. This person assisted James Montgomery during the raid on **Combahee** [kum-BEE] Ferry during the Civil War. John Brown often referred to this person, who helped him with recruiting, as a "general". This person claimed to think "I had crossed the line of which I had so long been dreaming" when she entered Philadelphia, and her fame was due to her many trips between Philadelphia and Maryland. This person often sang "Go Down Moses", and in fact she was sometimes called "Moses". Name this woman who helped the Underground Railroad.

Answer: Harriet **Tubman** [or Araminta **Ross**]

18. The 1975 Nobel Prize in Physics went to Leo Rainwater and two Danes who determined that this region is not always round. John Archibald Wheeler and Niels Bohr worked together using the liquid drop model to explain why these regions split. The size of one of these regions is a few **femto-meters** [FEM-toh-"meters"], or fermis, a unit that was developed while studying them. **Mesons** [MAY-zahnz] were first hypothesized to explain the stability of this region. The existence of this region was demonstrated by Ernest Rutherford's Geiger-Marsden gold foil experiment because alpha particles that went close to these regions were scattered. Name this region where the strong interaction binds protons and neutrons.

Answer: atomic **nucleus** or **nucleus** of an atom or **nuclei**

19. **Francesco Morosini** [fran-CHESS-koh moh-roh-ZEE-nee] is blamed for much of the destruction of this building because he ordered an attack when this building—which is not in Turkey—was storing gunpowder during the Great Turkish War in the 17th century. The British Museum contains several sculptures that were taken from this building in the early 19th century and are called the Elgin Marbles. **Ictinos** [IK-tuh-nohss] and **Callicrates** [kal-uh-KRAY-teez] worked on this building under the supervision of **Phidias** [FID-ee-uss], who designed a large gold and ivory statue of Athena that used to be inside this building. Name this former temple that is a major part of the Acropolis of Athens.

Answer: **Parthenon** [or **Parthenónas**] [accept **Acropolis** before “building” in the first sentence]

20. During this war, George Monro was promised that his troops would be able to travel to Fort Edward, but some of his troops were slaughtered. That event happened after this war’s Siege of Fort William Henry, which was a victory for **Louis-Joseph** [loo-ee zhoh-seff] de Montcalm. Two years later during this war, Montcalm was killed while losing in battle to James Wolfe, who also died in the Battle of the Plains of Abraham. At this war’s Battle of Fort Necessity, George Washington surrendered. Name this 1754-to-1763 war named for the two groups that the British colonies in America fought against.

Answer: **French and Indian** War [prompt on **Seven Years’** War]

21. These numbers are used as coefficients of a polynomial that approximates the fraction “ x over the quantity 1 minus x minus x squared” near x equals 0. The n -plus-first of these numbers times the n -minus-first differs by 1 from the square of the n th of these numbers, according to Cassini’s identity. These numbers and **Lucas** [loo-kah] numbers follow the same recurrence relation. The limit of the ratio of successive pairs of these numbers is the golden ratio. These numbers were introduced in a book that used them to model the growth of rabbit populations. Name these numbers, each of which equals the sum of the previous two numbers, starting with 1, 1, 2, 3, 5, 8.

Answer: **Fibonacci** numbers or **Fibonacci** sequence

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Bonuses

1. The husband in this story says “Nothing like a haircut could make me love you any less. But if you’ll open that, you may know what I felt when I came in.”

A. Name this O. Henry story in which Della sells her hair to buy a Christmas gift for her husband.

Answer: “The **Gift of the Magi**”

B. Della sells her hair to buy this object for her husband Jim.

Answer: a gold watch **chain** [do not accept or prompt on “watch”]

C. In his other story “The **Caballero’s** [kah-bay-YAIR-oh’z] Way”, O. Henry created this character who loved to kill and was loved by Tonia Perez.

Answer: the **Cisco Kid** [or **Goodall**]

2. Images depicting these sisters were often made on the bottoms of bowls and tops of jars.

A. Name this group of ugly sisters that included **Stheno** [s’THEE-noh] and **Euryale** [yoor-“EYE”-uh-lee]. They were immortal, and the other sister in this trio was mortal.

Answer: **Gorgons**

B. Name the mortal Gorgon whom Perseus beheaded.

Answer: **Medusa**

C. This king sent Perseus on a mission to get the head of Medusa. He was interested in Perseus’s mother **Danaë** [DAN-ay-ee].

Answer: **Polydectes** [pah-lee-DEK-teez]

3. During this battle, the Union defended itself at Cemetery Ridge.

A. Name this deadly July 1863 battle in Pennsylvania. A few months after this battle, President Lincoln dedicated a cemetery at its site by giving a speech that began “Four score and seven years ago.”

Answer: Battle of **Gettysburg**

B. On the last day of the battle, the Confederates made a charge at Cemetery Ridge that is named for this major general.

Answer: George (Edward) **Pickett** [accept **Pickett**’s Charge]

C. This person resigned as Commander of the Army of the Potomac three days before Gettysburg and was replaced by George Meade. He was blamed for the Union loss at Chancellorsville.

Answer: Joseph **Hooker**

4. This phenomenon is caused by air vibrations between about 20 hertz [“hurts”] and 20 kilo-hertz.

A. Name this phenomenon studied in acoustics.

Answer: **sound** waves [accept **noise**]

B. This effect is the change in the frequency of a sound due to the motion of the source and/or listener.

Answer: **Doppler** effect

C. This phenomenon is the prolongation of sound caused by a large number of reflections. It is a combination of echoes.

Answer: **reverberation**

5. This woman marries George Tesman, who has a rivalry with Eilert Lovborg.

A. Name this title character of a play. She burns Lovborg’s manuscript.

Answer: **Hedda Gabler** (**Tesman**) [accept any]

B. *Hedda Gabler* was written by this Norwegian playwright who also wrote *Peer Gynt*.

Answer: Henrik (Johan) **Ibsen**

C. In this play by Ibsen, an orphanage funded by Helen Alving burns down.

Answer: **Ghosts** [or **Gengangere**]

6. This adjective describes a trapezoid with a line of symmetry that bisects its parallel sides.

A. Give this adjective that also describes a triangle with two congruent sides and two congruent angles.

Answer: **isosceles** [“eye”-SAH-suh-leez]

B. Find the measure, in degrees, of one of the base angles of an isosceles triangle if the vertex angle measures 30 degrees.

Answer: **75** degrees

C. Find the height of an isosceles trapezoid if its bases measure 10 units and 6 units and the other sides each measure 5 units.

Answer: square **root** of **21** units [accept **radical 21** units; do not prompt on “21”]

7. The source of this river is Lake **Itasca** [“eye-TASK-uh”] in Minnesota.

A. Name this river that forms a border of several states, including Illinois and Iowa, before flowing into the Gulf of Mexico.

Answer: **Mississippi** River

B. A state park next to the Mississippi River in Cape **Girardeau** [juh-RAR-doh] County, Missouri commemorates this tragic passage that went from Cherokee Agency, Tennessee to Fort Gibson, Oklahoma.

Answer: **Trail of Tears**

C. This name is shared by a river that feeds the Mississippi from Illinois and an Illinois village that is west of the Mississippi River.

Answer: **Kaskaskia** [kass-KASS-kee-uh]

8. This term refers to a form with an exposition, development, and recapitulation.

A. Give this term that also applies to music that is performed by a solo instrument with or without piano accompaniment, such as Ludwig van Beethoven’s piece nicknamed “Moonlight”.

Answer: **sonata** [accept piano **sonata**(s) or **sonata** form]

B. This composer wrote *Sonatas and Interludes* for prepared piano during the 1940s. He later wrote *Four Minutes Thirty-Three Seconds*, which has no deliberate sounds.

Answer: John (Milton) **Cage** (Jr.)

C. This Russian composer wrote 10 sonatas for piano, including his white and black masses. When this composer died, Sergei **Rachmaninoff** [rahk-MAH-nin-awff] toured Russia playing his music.

Answer: Alexander **Scriabin** [skree-AH-bin]

9. The largest of these objects in the world is the Lambert, which is 270 miles long and 60 miles wide.

A. Name these persistent masses of slow-moving ice.

Answer: **glaciers**

B. This ice **ablation** [uh-BLAY-shun] process occurs when a chunk of ice suddenly breaks off of the edge of a glacier.

Answer: ice **calving** [or **calve**]

C. Because this **epoch** [EP-uk] had repeated glaciations, it is sometimes called the Ice Age. This epoch started the Quaternary Period, immediately preceding the **Holocene** [“HOLE-oh-seen”] epoch.

Answer: **Pleistocene** [PLY-stoh-seen] epoch

10. This organization's first president was Moorfield Storey, and its founders included W. E. B. Du Bois [boyss] and Ida Wells.

A. Name this civil rights organization that gives out Image Awards and the Spingarn Medal.

Answer: NAACP or the National Association for the Advancement of Colored People

B. The NAACP registered nine students in Central High in this city in 1957. This city's mayor, Woodrow Wilson Mann, supported the students, though its state's governor, Orval Faubus, did not.

Answer: Little Rock, Arkansas

C. The NAACP grew out of this movement named for the location of an initial meeting.

Answer: Niagara Movement

11. The Miller index is used to categorize planes in these structures.

A. Name these solids in which atoms, molecules, or ions are arranged in a lattice.

Answer: crystals or crystalline solids

B. Of the seven categories of crystal systems, this one is the most symmetric, with equal distances and right angles. This system cannot be base-centered but can be primitive, body-centered, or face-centered.

Answer: cubic [prompt on cube]

C. On the other hand, this crystal system is the least symmetric. In this system, the axes are of unequal lengths and are not perpendicular.

Answer: tri-clinic

12. Answer the following about fictional ships:

A. This novella by Joseph Conrad is set on the *Nellie* on the Thames [temz]. In it, Marlow describes finding Mr. Kurtz in Africa.

Answer: *Heart of Darkness*

B. Many of the characters in Jules Verne's [zhool vairn'z] *Twenty Thousand Leagues Under the Sea* leave the U.S. on this ship before they are captured by Captain Nemo on the *Nautilus*.

Answer: USS *Abraham Lincoln*

C. In this novel, Major William Dobbin is very sick when he boards the *Ramchunder*, but he becomes popular on board when he recovers.

Answer: *Vanity Fair*

13. Identify these artists who placed dogs in their paintings:

A. This artist put a pet dog near the pet monkey in his pointillist masterpiece *A Sunday Afternoon on the Island of La Grande Jatte* [zhaht].

Answer: Georges(-Pierre) **Seurat** [zhorzh soo-rah]

B. This artist showed a woman playing with a dog who is on the table in *Luncheon of the Boating Party*.

Answer: Pierre-Auguste **Renoir** [ren-war]

C. There are several dogs in the lower left corner of this 16th-century artist's *Hunters in the Snow*, which is also known as *The Return of the Hunters*.

Answer: Pieter **Bruegel** [BROO-gull] the Elder

14. If two angles have this relationship, then the tangent of one angle equals the cotangent of the other angle.

A. Name this relationship in which the measures of two angles add to 90 degrees.

Answer: **complementary** angles [or **complements**]

B. If an angle measures 32 degrees and 20 minutes, find the measure of its complement in degrees and minutes.

Answer: **57** degrees and **40** minutes [if they don't specify "degrees" and "minutes", the order must be correct]

C. If the cosine of an angle is 0.6, find the cosine of the complement of the angle.

Answer: **0.8** or **4/5**

15. A few decades after this person died, the importance of his pea plant studies was recognized.

A. Name this monk who first used the terms "recessive" and "dominant" in genetics.

Answer: Gregor **Mendel**

B. According to Mendelian inheritance, if there are two **heterozygous** [HET-uh-roh-ZY-gohss] parents, then how many offspring should have the dominant trait for every offspring with the recessive trait?

Answer: **3** to 1

C. This Mendelian-recessive disease in humans can lead to intellectual disabilities. People with this condition should not eat dairy products, meat, fish, chicken, eggs, beans, or nuts during childhood.

Answer: **phenylketonuria** or **PKU**

16. Martín Vizcarra became the president of this country when Pedro Pablo Kuczynski [koo-CHIN-skee] resigned in the middle of several corruption scandals.

A. Name this country that contains several locations important to the Inca people, including Cusco [KOOS-koh] and Machu Picchu [MAH-choo PEE-choo].

Answer: (Republic of) **Peru** [or (República del) **Perú**]

B. This person, who is also considered the liberator of Argentina and Chile, declared Peru's independence in 1821. This person met with Simón Bolívar the next year.

Answer: José (Francisco) de **San Martín** (y Matorras)

C. Due to a secret alliance, Peru joined Bolivia during this war against Chile. It is sometimes called the Saltpeter War.

Answer: War of the **Pacific** [or Guerra del **Pacífico**]

17. For a heat engine, the change in this quantity equals the difference between the heat input and the work done by the engine.

A. Name this quantity equal to internal energy plus the product of pressure times volume.

Answer: **enthalpy** [prompt on **H**]

B. This law states that the enthalpy change during a reaction does not depend on the steps in the reaction.

Answer: **Hess's** law (of constant heat summation)

C. This "cycle" uses Hess's law to find the lattice energies of ionic crystals.

Answer: **Born-Haber** cycle

18. In this play, the Player says "Deaths for all ages and occasions! Deaths by suspension, convulsion, consumption, incision, execution, asphyxiation and malnutrition!".

A. Name this play where that line is spoken before Alfred, who is one of the Tragedians [truh-JEE-dee-unz], dies.

Answer: ***Rosencrantz and Guildenstern Are Dead***

B. This playwright wrote *Rosencrantz and Guildenstern Are Dead* as well as *Arcadia*.

Answer: Tom **Stoppard** [or Tomáš **Straussler**]

C. Many of the characters, including the title characters, in *Rosencrantz and Guildenstern Are Dead* are taken from this William Shakespeare play set in Denmark.

Answer: ***Hamlet***

19. If you measure angles in this unit, then the limit as x approaches 0 of sine x over x [pause] equals 1.

A. Name this unit for angles that is based on arcs of the unit circle.

Answer: **radians**

B. Convert 100 degrees to radians.

Answer: **$\frac{5\pi}{9}$** radians or **$\frac{5}{9}\pi$** radians

C. Find the measure of a circle's central angle in radians if the radius of the circle is 10 units and the angle subtends an arc of length 6 units.

Answer: **0.6** or **$\frac{3}{5}$** radians [do not accept answers that mention pi]

20. The protagonist of this novel ends up in a small village in South America, where he is asked to read Charles Dickens novels to the leader.

A. Name this novel about Tony Last, whose wife Brenda has an affair.

Answer: *A **Handful of Dust***

B. This author of *Brideshead Revisited* wrote *A Handful of Dust*.

Answer: **(Arthur) Evelyn (St. John) Waugh** [EEV-uh-lin waw]

C. In *A Handful of Dust*, Tony Last grew up while staying at Hetton Abbey in a bedroom named for this supposed enchantress who lived on Avalon.

Answer: **Morgan** Le Fay [or **Morganna** or **Morgain**; prompt on Le **Fay**]