1. **These particles exist in Kogut-Susskind varieties. One type of this particle can emerge as a Bogoliubov quasiparticle in superconducting materials and is named for Ettore Majorana. An atomic "condensate" version of these particles was created by a team led by Deborah S. Jin in 2003. The nucleus of a** carbon-13 atom and baryons and leptons are these types of particles that follow Fermi-Dirac statistics and obey the Pauli Exclusion Principle. For ten points, name these particles that differ from bosons because of their half-odd integer spin.

Answer = <u>Fermion</u>s

2. **One sect of these people that lived above the "Wild Fields" were known as the Zaporozhians. These people signed the Pereyaslav Agreement as well as a treaty with Emperor Rudolf II in the 1590s. Stenka Razin led an army of them. A five-year siege of Orenburg was done by one of these people named** Yemelyan Pugachev. Their leaders were known as "atamans" and "hetmans" and these Orthodox Christian people commonly lived near the Dnieper and Don rivers. For ten points, name these Slavic nomadic warriors who lived in 19th century Russia.

Answer = <u>Cossack</u>s

3. **One novel by this author that takes place in Tarbox, Massachusetts includes the nuclear physicist John Ong. Another novel by this author sees Tristão Raposo give a stolen ring from an American tourist to Isabel Leme. This author of *Couples* and *Brazil* also wrote a novel that sees a 26-year-old former high school** basketball star who's married to Janice have an affair with Ruth Leonard and sell MagiPeelers. For ten points, name this American author who wrote about Harry Angstrom in his *Rabbit* series.

Answer = John <u>Updike</u>

4. **This opera is based on a Victorien Sardou play. A painter in this opera asks another what eyes could be more beautiful than her own in the aria "Qual' occhio al mondo" In this opera, a character laments how God has abandoned her in the aria "Vissi d'arte." A "hidden harmony" is described by the aria** Recondita armonia in this opera, that sees Baron Scarpia torture Mario Cavaradossi. The aria "E lucevan le stelle" is sung in, for ten points, what Giacomo Puccini opera that ends with the title character jumping off of the Castel Sant'Angelo?

Answer = <u>Tosca</u>

5. **Adipic acid, the precursor to nylon, is produced by oxidation of "KA oil" and this compound. The "red fuming" variety of this compound was one of three liquid fuel components for the BOMARC missile. During the xanthoproteic reaction, proteins are tested for using concentrations of this compound. The** Ostwald process is commonly used to produce this compound, which is in a 1:3 ratio

with hydrochloric acid in aqua regia. For ten points, name this compound with chemical formula HNO_3.

Answer = <u>Nitric Acid</u>

6. **In one poem by this author, the narrator binds the "Sun's throne with a burning zone" and says that he "brings fresh flowers for the thirsting flowers." After the Peterloo Massacre, this man wrote the poem** *The Masque of Anarchy.* **This author of "The Cloud" also wrote a poem in which the narrator exclaims "The** trumpet of prophecy!" and asks "If Winter comes, can Spring be far behind?" Another of his poems opens "Hail to thee, blithe Spirit!" For ten points, name this British poet of "To a Skylark" and "Ode to the West Wind."

Answer = Percy Bysshe <u>Shelley</u>

7. **Salvador Dalí sent a telegram to this leader after he introduced the "presidential Sceptre." After this leader signed a law raising the retirement age from fifty to fifty-five, the Jiu Valley miners' strike occurred in his country. This man outlined seventeen proposals inspired by China's Cultural Revolution in his** July Theses, and his Decree 770 banned abortions in his country. This man and his wife Elena were killed by firing squad on Christmas Day amidst a communist revolution. For ten points, name this leader of Romania from 1967 to 1989.

Answer = Nicolae <u>Ceaușescu</u>

8. **These proteins contain loops called CDRs. "Mimetics" of these proteins include affimers like cystatin and nanoCLAMPs. False negatives when using assays can occur with impaired effectiveness of these proteins, which is called the hook or the prozone effect. These proteins are encoded in variable,** diversity, and joining segments, and they can undergo class switching or somatic hypermutation. Coming in "monoclonal" varieties and having two heavy and two light chains, these are, for ten points, what Y-shaped proteins that neutralize pathogens?

Answer = <u>Antibodies</u> (accept <u>Antibody</u>, Monoclonal <u>Antibodies</u>, accept <u>Immunoglobulins</u>, accept <u>Ig</u> but not any specific variety after Ig, like IgE or IgM)

9. **This thinker discussed predicates in a work that discusses ratiocination and states that legitimate conclusions can be drawn in all four figures; that work is** *The False Subtlety of the Four Syllogistic Figures.* **This thinker also wrote about the contrast between striving idealism and personal vice. The existence of** "things-in-themselves" was posited by this philosopher who drew a parallel to the Copernican Revolution by stating that worldly objects can be intuited *a priori.* For ten points, name this German thinker who wrote *Critique of Pure Reason.*

Answer = Immanuel <u>Kant</u>

10. **One author from this nation wrote a novel divided into 12 sections, each of which begins with a recipe from this nation, for each month of the year. In another novel from this nation, Rachel and Lucy's aunts are called "The Three Sisters." A character eats a box of candles after Pedro dies in the kitchen in** Like Water for Chocolate, a novel by this country's author Laura Esquivel. The author of *The House on Mango Street* currently lives in, for ten points, what nation, the partial home of Sandra Cisneros and the birthplace of Octavio Paz?

Answer = <u>Mexico</u>

11. **During this election year, the slogan "Don't change horses in the middle of a stream" was used by one party. One candidate in this election year was replaced by Francis W. Pickens as Minister to Russia, while another later led the California Battalion and the capture of Sonoma. After this election, the phrase** "malice towards none, with charity for all" was used in an inauguration speech. The Radical Democrats and Copperheads were third parties in, for ten points, what election that saw George B. McClellan lose to the incumbent Abraham Lincoln?

Answer = Election of <u>1864</u>

12. **The extern template is used in one variety of this language. Invalid substitution of template parameters can result in the SFINAE situation in this programming language. The "new" and "delete" constructs are also used in this language, which is the fourth most popular in the world. The** Danish inventor of this language did so while working at AT&T Bell Labs. This compiled language is called a "with classes" addition to its predecessor. For ten points, name this programming language invented by Bjarne Stroustrup.

Answer = <u>C++</u> (don't accept or prompt on C alone)

13. **This team uses the OVO Athletic Centre, and one of its players formerly played for the German team Alba Berlin and is named Malcolm Miller. One player from this team scored 35 points in a 2019 112-107 overtime loss to the Detroit Pistons. This team defeated the Philadelphia 76ers and the Milwaukee** Bucks on their way to their first win in NBA history. Kyle Lowry plays for this team, which has a famous partnership with Drake. Small forward Kawhi Leonard plays for, for ten points, what team that beat the Golden State Warriors to win the 2019 NBA Finals?

Answer = Toronto <u>Raptors</u>

14. **This artist depicted a transparent sphere enclosing a pickpocket in one painting, and in another showed a half-eaten egg and a fence made of interwoven sausages. This artist of *The Misanthrope* and *The Land of Cockaigne* also painted a shepherd gazing into the air as the title character uses feathers made of** beeswax to fly away in one work. He depicted rabbit footprints, a fox corpse and jagged

mountains in another work. For ten points, name this Flemish artist of Landscape With the Fall of Icarus and Hunters in the Snow.

Answer = Pieter <u>Bruegel</u> the Elder

15. **In this play, a character goes with the Chaplain to buy a Catholic flag and some meat. In this play, a character sings the "Song of Great Capitulation", and it ends with soldiers singing the lines "Let all of you who still survive / Get out of bed and look alive!" A character quarrels with the Cook over a capon, while** Yvette Portier marries a colonel in this play. In this play, Eilif, Kattrin, and "Swiss Cheese" are the title characters and are taken care of by Anna Fierling. Set during the Thirty Years' War, for ten points, name this play by Bertolt Brecht.

Answer = *<u>Mother Courage and Her Children</u>*

16. **The boxer Damarchus was turned into one of these people by Zeus, while a son of these people was a foster-father of the infant Hermes and was a king of Acacesium. The Neuri people of Scythia were these people after being transformed every year for several days. After serving the entrails of a** Molossian hostage to Zeus, a King of Arcadia was turned into one of these people. These people are able to transform on the night of the full moon. Lycaon was one of, for ten points, what humans with the ability to shapeshift into wolves?

Answer = <u>Werewolves</u> (prompt on wolf alone before said)

17. **This artist told the story of the immigrant Thierry Guetta in the 2010 documentary *Exit Through the Gift Shop*. He depicted a winged policeman with a yellow smiley replacing his face in a work shown on cardboard, *Flying Copper*. This artist's exhibitions include *Turf War* and *Dismaland*. A mechanical** shredder was placed inside one of this man's works that shows a young girl watching a red balloon carried away by the wind. *Love is in the Bin* is by, for ten points, what anonymous British street artist who uses a combination of stencil and graffiti?

Answer = <u>Banksy</u>

18. **This ruler created the General Eyre and signed the Treaty of Windsor to make Rory O'Connor High King of Ireland. The Assize of Clarendon, which installed trial by jury in England, was an act signed by this ruler, who helped Empress** Matilda, his mother, in defeating his predecessor King Stephen of Blois. Archbishop of Canterbury Thomas Becket frequently feuded with, for ten points, what husband of Eleanor of Aquitane and first Plantagenet King of England?

Answer = <u>Henry II</u> of England (prompt on Henry alone, accept <u>Henry II</u> Plantagenet or <u>Henry II</u> Curtmantle or <u>Henry</u> FitzEmpress)

19. **This lake contains Grand Island, and it borders the 12-acre Glensheen Historic Estate. County Road 12, often nicknamed the Gunflint Trail, was built to lead**

travelers to this lake. The Gooseberry Falls State Park, near the city of Two Harbors, borders this lake. The Ontonagon River flows into, while the St. Mary's River drains this lake, whose largest island is Isle Royale. This lake borders the Upper Peninsula of Michigan, Ontario and Minnesota. For ten points, name this Great Lake, the largest freshwater lake in the world by surface area.

Answer = Lake <u>Superior</u>

20. **Alfred Adler argued that this concept could be explained by the unconscious self converting feelings of inferiority to superiority. Abraham Maslow theorized that self-actualizing people indicate a "coherent syndrome" of this concept, while Raymond Cattell compiled over 2,000 separate tests of this entity. A "Five** Factor" Model also exists for this entity, which is often paired with mental make-up and temperament. The Myers-Brigg test examines, for ten points, what entity describing the behavioral traits of an individual?

Answer = <u>Personality</u>

Tiebreaker

1. **These objects include the Pasiphae and Carme groups, as well as a body discovered by Scott S. Sheppard and named for the Roman goddess of health. Valetudo is one of these objects, while another of them is the most geologically active object in the Solar System. The most heavily cratered surface and the** third-largest moon in the Solar System belong to these bodies. These bodies include Io and Callisto, and one of them has a water-ice crust. Europa and Ganymede are part of, for ten points, what bodies that orbit the Solar System's largest planet?

Answer = <u>Moons</u> of <u>Jupiter</u> (accept <u>Satellites</u> of <u>Jupiter</u>)