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TOSSUPS

1. In one of this artist's paintings, two tilted telephone poles and a curvy fence surround a path on which a red truck is about to collide with two black cars. This artist of *Death on the Ridge Road* painted an American hero galloping on a curved white road past a tall steeple. He also painted three old women, one of whom holds a teacup, in front of a greyed-out recreation of (*) *Washington Crossing the Delaware*. This artist of *The Midnight Ride of Paul Revere* and *Daughters of Revolution* painted a double portrait of his sister Nan and his dentist Dr. McKeeby, who holds a pitchfork and stares straight ahead. For 10 points, name this American regionalist painter of *American Gothic*.

ANSWER: Grant Wood [or Grant DeVolson Wood]

2. A drunk porter in this play pretends to be the gatekeeper of hell after speculating that such a gatekeeper would have a busy job. Thomas de Quincey wrote an essay about the psychological value of Lennox and his friend "knocking at the gate" in Act II of this play. Three characters in this play tell the title character that he will not die until (*) "Birnam Wood" reaches "Dunsinane Hill." The title character of this play hallucinates a floating dagger before undertaking an action that later makes his wife scream "Out, damned spot!" The ghost of Banquo haunts the man who killed Duncan in this play. For 10 points, name this supposedly-cursed "Scottish Play" written by William Shakespeare.

ANSWER: Macbeth [accept *The Tragedy of Macbeth*]

3. Rocks in these locations can form a closely packed surface covered in iron and manganese oxides called their namesake pavement. The Koppen ("COP"-en) classification system puts these locations into the BW class, which is further divided up by latitude. Some of these regions possess features that can move via saltation, preventing them from reaching their angle of repose on their windward side. These regions are often categorized based on levels of (*) evapotranspiration ("evapo - transpiration"), meaning the largest examples are actually in the Arctic and Antarctic, and they can form in the rain-shadows of mountains. For 10 points each, name these areas with sand dunes and little to no water.

ANSWER: deserts

4. In a novel by this man, Leo Auffman builds a Happiness Machine, but ironically finds that it causes both his son Saul and his wife Lena to weep. That novel by this man focuses its main plot on the summer activities of twelve year old Douglas Spaulding. In another novel by this author of (*) *Dandelion Wine*, the protagonist drives Mrs. Phelps to tears by reciting "Dover Beach," and finds comfort in his interactions with his neighbor Clarisse McClellan. That protagonist is later hunted by the Mechanical Hound after killing Captain Beatty. For 10 points, name this author who created the fireman Guy Montag in his *Fahrenheit 451*.

ANSWER: Ray Bradbury

5. This ruler supposedly executed Raynald of Chatillon (SHA-tee-yon) for drinking a cup of ice water without his permission. The expansion of this ruler's empire was temporarily halted after he was defeated at the Battle of Montgisard (MOHNT-jee-SABRD) by the leper king Baldwin IV ("the 4th"). This protege (PRO-teh-jay) of the Zengid warlord Nur ad-Din founded the Ayyubid Dynasty after he overthrew the Egyptian (*) Fatimid Caliphate. After unsuccessfully besieging the city of Jaffa in 1192, this ruler opened his land to Christian pilgrimages at the end of the Third Crusade. For 10 points, name this Muslim ruler who fought Richard the Lionheart.

ANSWER: Saladin [or Salah ad-Din Yusuf ibn Ayyub]

6. A character in this series can trap opponents in a grab with a technique commonly referred to as "Wobbling". PPMD recently beat the Swedish Armada at the APEX 2015 event for this series, whose advanced techniques include "L-cancelling" and (*) "Wavedashing". Players fight against endless wireframes in a minigame from this series. Flying Unown can be used as platforms in the Poké Floats stage of this series. When fully-charged, Roy's "Flare Blade" will deal 10% recoil damage in a game from this series. For 10 points, name this platform fighting game series whose "Melee" and "Brawl" varieties feature Nintendo characters such as Marth and Mario.

ANSWER: Super Smash Bros. [or Super Smash Brothers; accept Smash; prompt on "Super Smash", accept specific entries such as 64, Melee, Brawl, Wii U, or 3DS]

7. In a play by this author, an old man with an insatiable passion for law is tricked into acquitting a dog for eating some Sicilian cheese. This author condemned audiences for not appreciating a previous one of his plays that Socrates partly blamed for his trial. A play by this author features a man who initially refuses his father Strepsiades' wish for him to attend "The (*) Thinkery". The Chorus represents the title insects in this man's play *The Wasps*. Another of this man's plays sees women deny their husbands sex until the end of the Peloponnesian War. For 10 points, name this ancient Greek author of *The Clouds* and *Lysistrata*.

ANSWER: Aristophanes

8. In 1995 a holder of this position was called a "Cry Baby" for complaining about having to leave Air Force One through the back door. The custom of the "disappearing quorum" was ended by a powerful holder of this position nicknamed "Czar Reed." In May 2015 a former holder of this position was indicted for illegally withdrawing bank funds to pay off victims that he had sexually abused as a high school teacher. (*) Dennis Hastert gained this position after the 1999 resignation of Newt Gingrich, who had spearheaded Bill Clinton's impeachment. For 10 points, name this Congressional leadership position now held by Paul Ryan.

ANSWER: Speaker of the United States House of Representatives [or House Speaker; prompt on "Speaker"; do not accept "House Majority Leader"]

9. The largest subgroup of these organisms create dikaryons ("die"-"CARE"-ee-on's), which exhibit a unique form of karyogamy ("carry"-AW-gah-mee), and can be divided into two main groups based on whether they form asci ("ASS"-eye) or basidia during sexual reproduction. A structure in these organisms can be classified as coenocytic if they lack septa. These organisms form mycorrhizae ("my"-co-"RYE"-zye) with the roots of plants, which involves the insertion of (*) hyphae into plant cells. The most famous examples of these organisms release spores from a structure formed from mycelium. For 10 points, name this kingdom which includes the unicellular yeasts and the multicellular mushrooms.

ANSWER: Fungi [or fungus; prompt on mushroom]

10. In the 1780s, this country's navy employed the former American revolutionary John Paul Jones. In the North Sea, this country's navy accidentally mistook British fishing boats for Japanese torpedo boats during the 1904 Dogger Bank Incident. A ruler of this country first established its navy after he secretly learned shipbuilding in the Dutch Republic while traveling on his Grand Embassy through Europe. Its Baltic Fleet was defeated at the Battle of (*) Tsushima (soo-SHEE-muh) by Japan while sailing to its Pacific naval base of Vladivostok (VLAD-ih-VOSS-tok). For 10 points, name this country whose navy was founded by Peter the Great.

ANSWER: Russia [or Russian Empire or Rossiya or Rossiyskaya Imperiya]

HALFTIME

11. It's not probability, but one form of this field ascribes a range of values from 0 to 1 for certain outcomes. That type used to represent vagueness is called fuzzy, while the modal type of this field uses symbols like diamonds and squares to represent possibility or necessity. The conjunction and disjunction operators are used in this field while applying (*) De Morgan's laws. This field uses a construct with a major and minor premise and a conclusion called a syllogism. For 10 points, name this field of philosophy that allows for deductive reasoning.

ANSWER: logic

12. The ratio of this quantity when substituting one isotope for another is the subject of the kinetic isotope effect. One equation which calculates this quantity uses the constant A times the exponential of negative activation energy over R T. It can be calculated for a reaction as the concentration of all compounds raised to their respective reaction orders. This quantity takes on the units of (*) inverse seconds times inverse molarity in a second order reaction, and can be calculated using the Arrhenius equation. For 10 points, name this quantity, symbolized k, which describes the speed of a reaction.

ANSWER: rate constant [accept k before given; prompt on rate]

13. A young man in a story from this collection describes a chest to prove that he murdered his wife over some rare apples. Cannibals feed men herbs that force them to think about food in a story from this collection. In another of its stories, a man finds a valley of diamonds after clinging onto a giant roc (*) bird. This collection is framed by a woman who must tell her husband a story in bed every night to avoid being executed. The poor farmer discovers the passphrase "open sesame" in its tale "Ali Baba and the Forty Thieves." For 10 points, the story of "Sinbad the Sailor" is found in what collection of Asian folk tales?

ANSWER: Arabian Nights [or One Thousand and One Nights; or One Thousand and One Arabian Nights; or Kitāb alf laylah wa-laylah]

14. This god is humiliated in a series of contests in which he fails to guzzle a drinking horn linked to the ocean and proves too weak to lift a cat off of the ground. This god takes the siblings Thjalfi (thee-YAHL-fee) and Roskva as servants after one of his two goats becomes crippled. This god grows furious when he finds that the beautiful golden hair of his (*) wife Sif has been cut. When his signature weapon is stolen, this god dresses as a woman, goes to a wedding, and kills the thieving frost giant Thrym ("thrim") after retrieving that weapon, his hammer Mjolnir. For 10 points, name this son of Odin, the Norse god of thunder.

ANSWER: Thor [or Donnar]

15. A part of this religious practice remembers a woman's search for water by running back and forth between two hills seven times. The most important part of this ritual consists of spending the day on the Mount of Mercy in deep repentance. Male participants in this practice enter the state of *ihram* by reducing their clothing to just two simple white garments. The holiday of Eid al-Adha marks the end of this ritual, which involves (*) walking around the Kaaba seven times. It is recommended that all able-bodied Muslims undergo this practice at least once in their lives. For 10 points, identify this pillar of Islam which consists of a pilgrimage to Mecca.

ANSWER: hajj [prompt on "pilgrimage to Mecca"]

16. Several stray dogs have gained international attention for learning how to travel via this city's Metro subway system, the busiest in Europe. This city is home to the tallest Orthodox church in the world, the Cathedral of Christ the Saviour. Since 1924 the embalmed body of a national leader has resided within a mausoleum in this city's central square, which is located down the street from the historic (*) Bolshoi Theatre and the State Duma. The onion-domed St. Basil's Cathedral sits in its Red Square. For 10 points, the Kremlin is in what capital city of Russia?

ANSWER: Moscow

17. This man's feud with former Pepsi-Cola president John Sculley led him to found a company called NeXT. In 2011 Walter Isaacson published a best-selling official biography of this businessman that described his management style as a "reality distortion field." In 1986 this man acquired the computer graphics division of Lucasfilm, which later became (*) Pixar. In the 1980s this man borrowed the graphic user interface invented by Xerox to launch a pioneering line of computers with his friend Steve Wozniak. For 10 points, name this cofounder and CEO of Apple who died in 2011.

ANSWER: Steve Jobs [or Steven Paul Jobs]

18. A symphony of this number, which quotes "A Mighty Fortress Is Our God" at the start of its finale, was written to commemorate the 300th anniversary of the Augsburg Confession; that symphony of this number is Felix Mendelssohn's *Reformation*. Ludwig van Beethoven's symphony of this number has the third and fourth movements played without a (*) pause in between, and ends in a triumphant C major despite starting in C minor. That symphony of this number comes one before his *Pastoral*, and begins with a "short, short, short, long" motif frequently compared to "fate knocking at the door." For 10 points, give this number of the middle symphony in Beethoven's career.

ANSWER: five [or Symphony No. 5; prompt on "two" or "Symphony No. 2" before "without"]

19. In this country, the independence fighter and Nazi collaborator Stepan Bandera is considered a national hero by many right-wing groups, including the Right Sector party. In May 2015 this country appointed the former Georgian president Mikheil Saakashvili as a regional governor. In February 2015 the fragile Minsk II (*) ceasefire came into effect in this country, which has witnessed fighting in its eastern cities of Luhansk and Donetsk since early 2014. Malaysian Airlines Flight 17 was shot down over, for 10 points, what country that lost Crimea to Russia in 2014?

ANSWER: Ukraine

20. The diffraction of these particles was used to advance the wave theory of matter in the Davisson-Germer experiment. These particles were fired through an inhomogeneous magnetic field to discover spin in the Stern-Gerlach experiment. The charge on these most common leptons was determined using Stokes' law to cancel out drag forces and measuring the terminal velocity in an experiment performed on (*) oil drops. These particles were discovered in cathode rays by J. J. Thompson, and they have a charge of negative 1.6 times ten to the negative nineteen Coulombs. For 10 points, name these negatively charged particles that orbit the nucleus of atoms.

ANSWER: electrons

END OF REGULATION, PROCEED ONLY IF TIED

21. In a novel from this country, a pickle factory worker is accused of rape after having an affair with Ammu. A novel titled after this country ends with the explanation that a physician from this country and Cyril Fielding can not be friends until this country is free. *The (*) God of Small Things* takes place in this country, and Dr. Aziz is accused of raping Adela Quested in another novel that takes place here. This country is the home of author Arundhati Roy and the setting of a novel by E.M. Forster about its British occupation. That novel is titled *A Passage to*, for 10 points, what Asian country?

ANSWER: India [or Republic of India; or Bharatiya Ganarajya]

22. In 1914 most of this organization was moved to more northerly headquarters at Scapa Flow. This navy launched the first all-aircraft naval attack in history at the Battle of Taranto, where it ambushed and destroyed an Italian fleet. In 1939 this navy hunted down an enemy battle cruiser off the coast of Uruguay called the *Graf Spee*. This navy introduced a revolutionary "all-big-gun" battleship known as the (*) *Dreadnought* (DRED-nawt) in 1906, sparking an arms race with Germany. It sank a German battleship known as the *Bismarck* during World War II. For 10 points, name this navy once led by Horatio ("hurray show") Nelson.

ANSWER: Royal Navy [or British navy; accept navy of the United Kingdom or descriptive equivalents; accept Her Majesty's Naval Service or Senior Service; accept Grand Fleet; prompt on "English navy"]

BONUSES

1. For 10 points each, name these Republicans who are no longer running for president:

[10] This former governor of Florida is best known for having a father and an older brother already serve as president.

ANSWER: Jeb Bush [or John Ellis Bush; prompt on "Bush"]

[10] This Indian-American governor of Louisiana quit the race on November 17. He declared a state of emergency during Hurricane Gustav in 2008, and his nickname comes from a character on *The Brady Bunch*.

ANSWER: Bobby Jindal [or Piyush Jindal]

[10] This former CEO of Hewlett-Packard oversaw its 2002 merger with Compaq but was forced out in 2005. This politician unsuccessfully ran for Barbara Boxer's Senate seat in 2010.

ANSWER: Carly Fiorina [or Cara Carleton Fiorina; or Cara Carleton Sneed]

2. The main character of this novel considers her kiss with Sally Seton as the happiest moment of her life, although she rejects both Sally and Peter Walsh to marry the wealthy politician Richard. For 10 points each:

[10] Name this stream-of-consciousness novel about Clarissa, whose party is marred by the suicide of Septimus Smith.

ANSWER: Mrs. Dalloway

[10] This author of *Mrs. Dalloway* also wrote *To the Lighthouse*.

ANSWER: Virginia Woolf

[10] In this Woolf novel, the title nobleman is born during the reign of Elizabeth I, but later changes gender and lives for more than 300 years, publishing her poem *The Oak Tree* in 1928.

ANSWER: Orlando: *A Biography*

3. A political faction known as the "Redeemers" aimed to bring an end to this period. For 10 points each:

[10] Name this period after the Civil War in which the South was militarily occupied and rebuilt by the Union.

ANSWER: Reconstruction

[10] During the Reconstruction, white Southerners who aided the federal government or supported the Republican Party were given this derogatory nickname.

ANSWER: scalawags

[10] Simultaneously, Northerners who moved to the South to profit from the Reconstruction were given this other derisive nickname, which referred to the type of luggage they usually carried.

ANSWER: carpetbaggers

4. The author of this epistle notes that when he was a child, he acted like a child, but after becoming a man, he put the ways of childhood behind him. For 10 points each:

[10] Name this book of the New Testament in which its author Paul declares that "love is patient, love is kind."

ANSWER: First Corinthians [or 1 Corinthians; or First Epistle to the Corinthians; prompt on "Corinthians"]

[10] In this first and longest epistle of the New Testament, Paul states that the "wages of sin is death" but stresses that it is possible for Christians to gain salvation by faith alone.

ANSWER: Romans [or Epistle to the Romans]

[10] A man with this name is credited with authorship of both the fourth gospel and a set of three short epistles near the end of the New Testament. Jesus's baptism is performed by a grizzly man of this name.

ANSWER: John [or John the Baptist; or Yohanan]

5. Bellerophon had a really sad life, but answer some questions about his sweet ride, for 10 points each.

[10] Bellerophon captured and tamed this winged horse, who created the Hippocrene on Mount Helicon. He was born from the neck of Medusa after Perseus chopped her head off.

ANSWER: Pegasus

[10] After Bellerophon killed the Chimera with a block of lead, he attempted to fly to this location, but Zeus sent a gadfly to sting Pegasus, who then threw his rider off.

ANSWER: Mount Olympus

[10] Chrysaor, the brother of Pegasus, fathered this giant. This resident of Erytheia ("air"-eh-THAY-uh) owned the two-headed dog Orthrus and a lot of cattle.

ANSWER: Geryon

6. The paper variant of this technique is typically the first introduced to students, and can separate the various pigments in ink. For 10 points each:

[10] Name this technique that uses the contrast between stationary and mobile phases to separate mixtures based on various parameters.

ANSWER: paper chromatography

[10] This type of chromatography has a similar procedure to paper chromatography and uses silica gel spread evenly across glass as a stationary phase.

ANSWER: thin-layer chromatography [or TLC]

[10] This factor is used to quantify the distance traveled by various components of a mixture in chromatography. It can be calculated for any given compound by dividing the distance it traveled by the total distance traveled by the mobile phase.

ANSWER: retention factor [or retardation factor; accept RF]

7. Answer the following questions about poetic forms from around the world, for 10 points each:

[10] These poems typically have two sections: a development of a "problem" and a recapitulation, separated by a *volta*.

Petrarch organized these poems in octaves and sestet.

ANSWER: sonnets

[10] These funny five line poems are written in anapestic meter and were popularized by Edward Lear. Many examples of them begin "There once was a girl from Nantucket..."

ANSWER: limericks

[10] These fixed-verse nineteen-line poems contain two repeating refrains. Dylan Thomas used "rage, rage, against the dying of the light" and "do not go gentle into that good night" as the refrains in the most famous example of these poems.

ANSWER: villanelles

8. For 10 points each, answer the following about the geography of coffee.

[10] In the early 18th century, the Dutch began growing coffee on this most populous island in Southeast Asia. Nowadays, this island's name is often used to refer to all coffee in general.

ANSWER: Java

[10] Kopi Luwak, an extremely expensive brew made from coffee beans defecated by Asian palm civet cats, is primarily produced in this archipelago nation that Java is a part of.

ANSWER: Indonesia [or Republic of Indonesia; or Republik Indonesia]

[10] In the late 19th century, this other country was controlled by the "coffee with milk" system, in which political power was shared between the dairy industry in Minas Gerais (MEEN-us jair-AY-is) and the coffee industry to the south.

ANSWER: Brazil [or Federative Republic of Brazil; or Republica Federativa do Brasil]

9. For 10 points each, answer the following about world events that happened near the end of World War I.

[10] Nearly one hundred million people were killed in this epidemic, which began in 1918 on the western front of World War I.

ANSWER: Spanish flu [or Spanish influenza; prompt on "H1N1"; prompt on "flu" or "influenza"]

[10] During the latter half of World War I, the Ottoman Empire forcibly deported millions living in the Caucasus Mountains during this genocide that resulted in over 1 million deaths.

ANSWER: Armenian genocide

[10] In 1919, thousands of students in this country protested the Treaty of Versailles in the May Fourth Movement.

ANSWER: China [accept Republic of China or Zhōngguó or Zhōnghuá Rénmín Gònghéguó; do not accept "People's Republic of China" or "PRC"]

10. Components of this structure are moved transversely by the enzymes flippase and scramblase, moving them from one side to the other. For 10 points each:

[10] Name this structure, described by the fluid mosaic model, that acts to regulate what can and can't enter a cell.

ANSWER: cell membrane [accept phospholipid bilayer]

[10] This compound is found in lipid rafts, which are condensed regions that concentrate proteins with related function. Drugs that reduce levels of this compound typically target HMG-CoA (H-M-G co-A) reductase.

ANSWER: cholesterol

[10] Lipids with this property increase the fluidity of the cell membrane because they have a kink in their fatty acid chains, creating space around them. Fatty acids with this property near the end of their tail can be labeled as omega-3.

ANSWER: unsaturated [accept word forms; prompt on "has double bonds"]

11. A Michelangelo sculpture of Lorenzo de Medici resembles and shares a title with this piece. For 10 points each:

[10] Name this bronze statue which depicts Dante Alighieri resting his chin on his knuckle, pondering *The Divine Comedy*.

ANSWER: *The* Thinker [or *Le* Penseur]

[10] *The Thinker* was made by this sculptor, who also depicted six would-be martyrs of the Hundred Years War in *The Burghers of Calais*.

ANSWER: Auguste Rodin [or François-Auguste-René Rodin]

[10] Rodin was accused of casting this sculpture from a live model. The model for this piece was originally holding a spear in his left hand; however, Rodin chose not to include it, so that hand now holds nothing but empty air.

ANSWER: *The* Age of Bronze [or *L'Âge d'airain*]

12. L'Hôpital's (loh-pee-TAHL's) rule states that an indeterminate limit remains equal after this operation is applied to both the numerator and denominator. For 10 points each:

[10] This operation is defined as the instantaneous rate of change of a function of x with respect to x. The fundamental theorem of calculus states that its reverse is integration.

ANSWER: differentiation [or taking the derivative]

[10] This other theorem states that if a function is differentiable from point a to point b, the tangent at some point c between a and b is parallel to the secant from a to b.

ANSWER: mean value theorem

[10] For some reason, Michel Rolle only considered the case when the secant is flat, so his namesake theorem is equivalent to the mean value theorem when the slope at point c equals this value.

ANSWER: zero

13. The modern Bluetooth protocol is named after Harald Bluetooth, the second historical king of this country. For 10 points each:

[10] Name this Scandinavian kingdom, whose current queen Margrethe II rules from its capital of Copenhagen.

ANSWER: **Denmark** [or Kingdom of **Denmark** or Kongeriget **Danmark**]

[10] In 1015, this grandson of Harald Bluetooth successfully invaded England, creating an empire that stretched across the North Sea. He was succeeded by a similarly named son with the prefix Hartha.

ANSWER: **Cnut (kah-NOOT)** the Great [or **Canute** the Great; or **Knútr** inn ríki]

[10] After Harthacnut (**hahr-tha-kah-NOOT**) died, his older half-brother Edward the Confessor became king of England; Edward himself was succeeded by this nobleman, who was eventually defeated and killed at the Battle of Hastings.

ANSWER: **Harold Godwinson** [or **Harold II**; prompt on "Harold"]

14. Alfred Jarry's *Ubu Roi* was a precursor to this movement, and that character was made into a spinning top in a painting in this style by Max Ernst, *Ubu Imperator*. For 10 points each:

[10] Name this avant-garde art movement that also included the work of Marcel Duchamp.

ANSWER: **Dadaism**

[10] Dada artwork was labeled as this kind of art by the German government. A 1937 exhibition of this kind of art defined it as works of art that "insult German feeling" and "reveal an absence of adequate manual and artistic skill".

ANSWER: **degenerate** art [or **entartete** kunst]

[10] The Degenerate Art Exhibition was authorized by this man, who described his rejection from Vienna's Academy of Fine Arts in his autobiography *Mein Kampf*.

ANSWER: Adolf **Hitler**

15. This man used the idea of the "Jonah complex" to describe a fear of success that prevents self-actualization. For 10 points each:

[10] Name this psychologist who has a namesake triangular "hierarchy of needs".

ANSWER: Abraham **Maslow**

[10] This psychological perspective grew as a response to the pessimistic, dark nature of psychoanalysis. Key practitioners of this perspective include Abraham Maslow and Carl Rogers, and tenets of this perspective include unconditional positive regard for the client.

ANSWER: **humanistic** psychology [accept word forms; accept **client-centered** therapy]

[10] This founder of logotherapy exemplified the beliefs of humanism by surviving as a victim of the Holocaust and learning to grow from even the most brutal parts of existence. He collected those thoughts in his book *Man's Search for Meaning*.

ANSWER: Victor **Frankl**

16. This composer's nine books of madrigals exemplify a transition from Renaissance music to Baroque music. For 10 points each:

[10] Name this Italian composer of the *Vespers for the Blessed Virgin* and a 1607 *favola in musica* titled *L'Orfeo*.

ANSWER: Claudio **Monteverdi** [or Claudio Giovanni Antonio **Monteverdi**]

[10] Monteverdi's *L'Orfeo* is the earliest example of this art form still regularly performed. This audiovisual medium often begins with an overture, and includes arias and recitatives based on a text called the libretto.

ANSWER: **opera** [or **operas**; or **opere**]

[10] Monteverdi wrote several of these large choral pieces that begin with a Kyrie and end with an Agnus Dei. J.S. Bach wrote one in B minor that clocks in at around two hours.

ANSWER: **mass** [or **masses**; or **missa**; or **Messe**]

17. In *The Tynborn Affair*, a single soul occupies three different characters of varying genders and sexualities, all of whose names start with this letter. For 10 points each:

[10] Name this letter that is entirely excluded by an Oulipo book and extended lipogram titled *A Void* by Georges Perec. This letter of the alphabet is also missing from *Gadsby* by Ernest Vincent Wright.

ANSWER: the letter e

[10] *The Tynborn Affair* is by this gay author of *The Vivisector* who wrote about a Prussian explorer disappearing in the Australian outback in *Voss*.

ANSWER: Patrick White

[10] In his autobiography *Flaws in the Glass*, Patrick White discussed his refusal to accept this award personally. Jean-Paul Sartre (**SAR-truh**) refused this most prestigious literary award in 1964, stating that he did not want to involve himself with the institution.

ANSWER: Nobel Prize in Literature

18. The Born-Oppenheimer approximation can be used to obtain separate examples of these quantities for a nucleus and its electrons. For 10 points each:

[10] Name this quantum mechanical quantity which describes the probability of various states as amplitudes.

ANSWER: wavefunction [prompt on psi]

[10] This partial differential equation comes in time-dependent and independent varieties and describes the change in a wavefunction over time. Its namesake also devised a famous thought experiment involving a cat in a box.

ANSWER: Schrodinger equation [or Schrodinger's cat]

[10] Schrodinger's cat has this condition of existing in several states simultaneously, in this case both life and death. In classical wave mechanics, this principle describes the overlap of two waves' amplitudes.

ANSWER: superposition

19. This short story begins with the line "The year was 2081, and everybody was finally equal." For 10 points each:

[10] Name this dystopian short story about an incredibly talented teenager who rebels against artificial handicaps that aim to make everybody in the world mentally and physically average.

ANSWER: "Harrison Bergeron"

[10] Harrison Bergeron breaks into a recital of people with *this profession* after taking off his handicaps and assigns a woman of *this profession* as his empress. Edgar Degas sculpted many examples of people with this profession.

ANSWER: ballerina [accept ballet dancer]

[10] "Harrison Bergeron" was written by this author of *Cat's Cradle* and *Slaughterhouse-Five*.

ANSWER: Kurt Vonnegut

20. For 10 points each, answer the following about helicopters throughout American military history.

[10] This Southeast Asian war ended in 1975 with a massive American helicopter evacuation from Saigon (**SYE-"gone"**).

ANSWER: Vietnam War [or Second Indochina War; or Chiến tranh Việt Nam]

[10] During the Vietnam War, American helicopter pilot Hugh Thompson attempted to evacuate victims from this 1968 massacre, in which American soldiers shot and killed over 300 Vietnamese civilians.

ANSWER: Mỹ Lai Massacre [or thảm sát Mỹ Lai]

[10] During Operation Eagle Claw, multiple American helicopters broke down as part of a failed attempt to end this 444 day-long event.

ANSWER: Iranian hostage crisis [accept any reasonable equivalent that contains both Iran and hostages; accept Taskhira lāne jāsusī Āmrīkā or any reasonable translation such as Conquest of the American Spy Den]

21. This compound's unsaturated structure was discovered by August Kekulé in an apocryphal dream where he saw an ouroboros eating its own tail. For 10 points each:

[10] Name this cyclic hydrocarbon with formula C_6H_6 .

ANSWER: **benzene** [accept **1,3,5-cyclohexatriene**, but look at them funny]

[10] Benzene has this property, meaning its alternating double and single bonds interact to give it extra stability. Compounds with this property are commonly drawn with circles inside their rings.

ANSWER: **aromaticity** [accept word forms]

[10] This Scottish chemist developed a bicyclic structure for benzene, which featured two fused cyclobutene rings. He is more famous for his namesake vacuum flask, which is used to store liquid nitrogen in scientific settings.

ANSWER: James **Dewar** [accept **Dewar benzene** or **Dewar flask**]