

**The Brief Wondrous Tournament of WAO** - *Málà Yousufzai, served extra spicy*

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Packet by MIT Alums and Chicago B

## TOSSUPS

1. A character in this book notes that, though man has moved beyond “barbaric times” as when Cleopatra stuck gold pins in slave-girls’ breasts, he still has yet to learn to act in accordance with science. This book’s opening section says man is meant to be more than an “organ stop” or piano key, warning against the dangers of a utopian “crystal palace” in reaction to the novel *What is to be Done?* A man in this book plots for years to get revenge by wearing a nice coat and bumping into an officer on the street, and takes away the salary of a disobedient servant named (\*) Apollon. After a character in this book admits to a woman that he lied to her in a brothel, she leaves his flat, realizing he is incapable of love. That protagonist visits his only friend Simonov and goes to a farewell dinner for Zverkov in its second part, titled “Apropos of the Wet Snow.” For 10 points, the narrator has a relationship with the prostitute Liza in what Dostoevsky novel about a recluse?

ANSWER: Notes from Underground [or Zapiski iz podpol'ya]

2. Joachim Bouvet’s letter to Leibniz detailing the contents of this work convinced the latter that it prefigured his own ideas about binary calculus. In his introduction to Richard Wilhelm’s version of this work, Carl Jung claimed that its main use was as a method of exploring the unconscious and that it works via synchronicity. Philip K. Dick used this work to help determine some plot elements in *The Man in the High Castle*, in which it is used as a source of moral authority. The *Ten Wings* are a set of commentaries on this work, which was used by (\*) John Cage to compose some pieces. The contents of this work can be arranged in patterns named for a man who helped create it, King Wen. The original method of using it, which involved casting yarrow stalks, was discarded during the Han Dynasty in favor of one using three coins. For 10 points, name this classic Chinese text whose 64 hexagrams are often used for divination.

ANSWER: I Ching [or Book of Changes or Classic of Changes or I Jing or Yi Ching or Yi King or Yi Jing]  
<Edited>

3. In several writings, Theodor Herzl proposed to appropriate this title for the head of the Israel and give it to a member of the Rothschild family. The chronicler John the Deacon served as secretary to a holder of this title, which was made subordinate to noble interests by the Ordinance of 1297. The historian Geoffrey of Villehardouin recorded and probably supported political meddling by a holder of this title, whose longest-serving holder expanded hinterlands called *terraferma*, in opposition to the Loredan family’s (\*) maritime-focused goals. Holders of this title were elected for life by the Great Council and usually sat in on meetings of the Council of Ten. Francesco Foscarelli was the longest-reigning holder of this title, whose most famous holder was a blind man who provided the ships that enabled Crusaders to sack Constantinople. For 10 points, give this title held by Enrico Dandolo.

ANSWER: doges of Venice [or Dukes of Venice; prompt on duke] <Edited>

4. A group of one type of these compounds metabolizes a precursor to leukotrienes called arachidonic acid, and a deficiency of another type can lead to chronic granulomatous disease. A deficiency associated with a substrate of one type of these comes in a French-Canadian type, causes progressive damage to the central nervous system, and is called Leigh's Disease. Each monomer of (\*) plastoquinol-plastocyanin reductase contains two types of these compounds. ATP production can be halted by cyanide binding to an oxidase associated with one of these. Apoptosis occurs when one type of these compounds activates a caspase cascade; that type is involved in moving electrons between complex III and IV of the electron transport chain. For 10 points, name these proteins that contain a heme group, examples of which include P450 and C.

ANSWER: cytochromes [accept answers that contain cytochrome, such as cytochrome B, cytochrome P450, or cytochrome C]

5. This artist's depictions of camels include a pen drawing titled *Camel (and Camel-Schema)*, as well as a painting of a segmented camel walking through a forest, subtitled *Rhythmic Landscape*. A square of muslin is glued over the part of the canvas containing a clock in this artist's *Fish Magic*. *Affected Place* combines the recurring motifs of large arrows and blocky colour gradients in this artist's work, which grew out of teaching techniques he developed. A golden orb is held at the top left of a painting by this artist in which the German word (\*) *tod* is spelled out in various ways; that is this artist's *Death and Fire*. This author of the *Pedagogical Sketchbook* painted a blue background in a work that shows a group of birds operating a hand-crank. For 10 points, identify this Swiss artist of *Twittering Machine*.

ANSWER: Paul Klee <Edited>

6. A speech in support of this legislation given at Limehouse described a class of men that "declined to do its duty." This legislation proposed a capital gains tax on the "unearned increment" in the value of land, in addition to a tax on undeveloped land. The veto of this legislation by Unionists sparked a five-year constitutional crisis during which a Parliamentary Act was introduced to curb the House of Lords' power. The so-called "Terrible Twins" who championed this legislation were the President of the Board of Trade, (\*) Winston Churchill, and a sitting Chancellor of the Exchequer who later delivered the Mansion House Speech as Prime Minister. This legislation partially aimed to win back voters from the Labour party during the Asquith government by proposing extensive social welfare measures. For 10 points, name this 1909 budget pushed by David Lloyd George.

ANSWER: People's Budget [only People's is needed after "budget" is read; accept any answer indicating the 1909/1910 budget for the United Kingdom until "1909" is read] <Edited>

7. At the end of the first act of a play titled for one of these locations, a morose man mourns, "I just never realized a girl might not love me." Two iron railings shaped like a cross serve as one of the only two set pieces in a play set at a location of this type. At a literary location of this type, a man wearing "Glasses" raises his watch to show everyone that ten years have passed. Visitors of a diner near one of these locations throw a pageant featuring a reenactment of *Romeo and Juliet*. In an (\*) absurdist play, several people including "Hothead," "Director Ma," and "Girl" go crazy while waiting at a location of this type before finally realizing it is no longer operating. This is the title of a play in which Cherie eventually warms up to Bo Decker, her would-be abductee. For 10 points, identify these locations which title plays by Gao Xingjian and William Inge.

ANSWER: a bus stop [Inge's *Bus Stop* and Gao's *The Bus Stop*]

8. The most common way to form Carbon-Phosphorus bonds utilizes this specific type of reaction with tri-alkyl-phosphites as the phosphorus source. The less electronegative atom in certain ambident species reacts under this type of reaction according to Kornblum's rule. In addition to the Arbuzov reaction, alkali metal and alkyl halides trade halides in another reaction of this type, the Finkelstein reaction. This reaction notably fails when using primary (\*) neopentyl groups due to steric hindrance. An organohalide reacting with an alkoxide in the Williamson ether synthesis exemplifies this type of reaction. This reaction's mechanism involves a Walden inversion of stereochemistry after the backside attack of an electrophile. For 10 points, name this concerted substitution reaction mechanism which uses two species in its rate limiting step.

ANSWER: **SN2** reaction [accept **bimolecular nucleophilic substitution** before mentioned; prompt on just nucleophilic **substitution**]

9. The first person to regularly recite this statement was criticized for his inability to pronounce the "sh" sound. Atatürk unsuccessfully attempted to mandate that this statement be made in Turkish. This statement is followed by the *iqama*, which has slightly different wording. The Shia version of this statement adds a line stating that Ali is the successor of Muhammad. The first person employed to make this statement was an Ethiopian slave, (\*) Bilal ibn Ribah. When this statement is made in the morning, it includes a line declaring that a certain activity is "better than sleep." This statement, which is often broadcast through loudspeakers, is made by an individual facing the qibla five times a day. For 10 points, name this statement made by muezzins from the minarets of mosques to get Muslims to worship. ANSWER: **adhān** [accept **call to prayer**; anti-prompt on **Shahada**] <Edited>

10. This writer negatively compared the present age to Walt Whitman's, saying that there is "less emphasis on the cradle, endlessly rocking" and more on "the teapot, endlessly stewing." This author wrote that in the East, "a story always sounds clear enough at a distance, but the nearer you get...the vaguer it becomes." In an essay, this writer analyzed the successive schools of literature following World War I and explained that 1930s writers were attracted to communism because they needed something to believe in. This writer praised the passive attitude taken by (\*) Henry Miller in *Tropic of Cancer*, analogizing him to Jonah in "Inside the Whale." In an essay by this author, the mahout is the only person who can handle an animal that has "gone must," and the narrator kills it "to avoid looking a fool." For 10 points, name this British author, whose time in Burma inspired his essay "Shooting an Elephant." ANSWER: George **Orwell** [accept Eric Arthur **Blair**]

11. The first fur trading post in this state was set up in 1809 by David Thompson at Kullyspell House. It's not Massachusetts, but after Albert Burch fired seventeen miners in 1899, miners blew up the Bunker Hill Mill in this state; seven years earlier, a shooting war erupted at this state's Frisco mine. This state's city of Hayden was where Richard Girnt Butler founded the white supremacist Aryan Nations. The labor leader Harry Orchard was acquitted in a murder trial that featured an orator known as this state's (\*) "Lion." Orchard later provided testimony for the prosecution during a trial in which Clarence Darrow defended a man accused of assassinating this state's governor Frank Steunenberg, "Big Bill" Haywood. William Borah was from this state, where a siege of Randy Weaver's compound took place at Ruby Ridge. For 10 points, name this western U.S. state nicknamed the Gem State and famous for its potatoes.

ANSWER: **Idaho**

12. As an engineer, this person held patents for a wastewater aerator design and designed the "Micro Mod" sailboat. This man performed with Benny Goodman and Stan Getz as a saxophonist, but he was criticized as a musical dilettante in a biography by Paul M. Handley whose title claims that this man "Never Smiles." This man, who propounded the "Sufficiency Economy" theory, was caught in controversy when his son's dog was allegedly named Air Chief Marshal Foo Foo. As a political figure, he intervened in the 1992 Black May crisis and backed a (\*) military coup in his country catalyzed by the Thammasat University massacre. In April 2006, an audience with this man may have persuaded Thaksin Shinawatra to resign. Despite his recent death, insulting him remains punishable by imprisonment under *lèse majesté* laws. For 10 points, name this man who died in October 2016 as the longest-reigning monarch in Thai history.

ANSWER: Bhumibol Adulyadej [or Phumiphon Adunyadet or Rama IX; prompt on King of Thailand or Rama]

13. Sir Charles Mackerras popularized a piece by this composer by making notable recordings of it with the Pro Arte Orchestra and Vienna Philharmonic. That piece by this composer opens with a set of stepwise descending parallel fifths from the tenor tubas, which are often played with euphoniums. The name "Defiance" is sometimes given to a *Capriccio* for left hand this composer wrote for a World War I veteran. An English horn solo represents the unfortunate fate of Andrey in a rhapsody for orchestra this composer based on Nikolai Gogol's (\*) *Taras Bulba*. He used a reprise of a fanfare featuring 14 trumpets to end a piece commissioned by the Sokol Gymnasium, and paid tribute to his heritage by writing a mass in Old Church Slavonic, as well as *The Cunning Little Vixen*. For 10 points, name this composer of the *Glagolitic Mass* and a famous *Sinfonietta*, a Czech.

ANSWER: Leos Janacek

14. This scientist is the alphabetically first namesake of modified field equations which add a finite electron radius to remove the divergence of the electron's self energy. Plane motions and group motions generated by a Killing field are two of the three degrees of freedom for bodies possessing this scientist's namesake rigidity according to the Herglotz-Noether theorem. Along with naming a model with Leopold (\*) Infeld, he names boundary conditions which can be used to prove Bloch's theorem. He co-names those boundary conditions that restrict a wavefunction to be periodic on Bravais lattices with von Karman. With Jordan and Heisenberg, he formulated the matrix mechanics representation of quantum mechanics. He is the alphabetically first namesake of an assumption that uses the slow relative motions of nucleons to separate their wavefunction from the electrons'. For 10 points, name this German physicist who names an approximation with Robert Oppenheimer.

ANSWER: Max Born

15. The necessity of irony for work on this concept is argued for in a book that analyses the subsumption of this concept to art by a thinker who suggested that this concept is inseparable from living. Another thinker argued that all writings on this subject fall under the categories of emplotment, argument or ideology. One thinker claimed that "the owl of Minerva" will only fly when stages of this process are complete. Benedetto Croce criticized that thinker's work on this concept. It's not philosophy, but the "linguistic turn" in this field is attributed to a study of its (\*) *Meta* form by Hayden White. In a work on this subject, another thinker claimed that it does not apply to Africa because it lacks "movement or development." Hegel argued that this thing progresses due to the absolute spirit in his *Lectures on the Philosophy of [it]*. For 10 points name this concept, the "end of" which was signalled by Francis Fukuyama.

ANSWER: history

16. Source port randomization was introduced to reduce the success probability of one attack on this protocol, which involves guessing a 16-bit transaction ID. In order to bypass a firewall, one can use tools like NSTX, Heyoka, or iodine, which tunnel data through this protocol. In 2008, Dan Kaminsky found a vulnerability in this protocol that greatly facilitated cache poisoning attacks. Vagner Sacramento discovered a birthday attack on (\*) BIND, the most commonly used software for this protocol. This protocol's record types include AAAA ["quad A"] and CNAME. In October 2016, sites like Reddit and Twitter went down in the US due to a DDoS attack on this protocol. This protocol usually uses UDP port 53 and is implemented by nameservers. For 10 points, name this protocol often compared to an Internet phone book because it converts web addresses to IP addresses.

ANSWER: Domain Name System

17. After Emperor Susunyeos I performed this action, six years of revolt ensued in Ethiopia; his son Fasilides reversed the resulting policies. A number of people in Kerala vowed not to perform this action in front of an open-air granite slab called Coonan. Xu Guangqi [shoo gwang-chee] believed that having the Chinese people perform this action would help restore good government and traditional Confucian morality. In 1866, the murders of thousands of people who had performed this action in Korea prompted a punitive expedition by (\*) France. Seventeen Japanese who had performed this action were among the Twenty-Six Martyrs of Nagasaki. Getting more people to perform this action was the primary goal of Matteo Ricci's missions. For 10 points, identify this religious action done by Queen Christina of Sweden, among others, that brings its performer into a community headed by the Pope. ANSWER: conversion to Roman Catholicism [accept logical equivalents like becoming Catholic; prompt on less specific answers like converting to Christianity by asking "what kind of Christianity?"; accept answers indicating making Catholicism the official religion] <Edited>

18. This composer, who is not Mies van der Rohe, wrote that his three artistic principles are "Less is more," "Content dictates form," and "God is in the details," all in service of "CLARITY". In a failed work by this man, Gussie has an affair with the composer Frank Shepard, whose life since adolescence is shown in reverse chronology. In another of his works, Amy lambasts "a prehistoric ritual where everybody promises fidelity forever" in a rapid patter as she panics on the morning of her (\*) wedding. This composer of *Merrily We Roll Along*, a frequent collaborator with James Lapine, reflected on his stage adaptation of a Victorian penny-dreadful and a 1970 show about the unmarried 35-year-old Bobby in his first annotated lyrics anthology, *Finishing the Hat*. For 10 points, name this protégé of Oscar Hammerstein, the lyricist and composer of the musicals *Company* and *Sweeney Todd*.

ANSWER: Stephen Sondheim <rewrite>

19. Dave Donaldson used a general equilibrium model to estimate the impact of railroads in this country on its development. The textbook *Poor Economics* was co-written by an economist from this country and Esther Duflo, who used evidence from this country to show that the gender of politicians affects the public goods they support in the paper "Women as Policy Makers." An economist from this country argued that government intervention should aim for "equality of autonomy" and fostering self-creation as part of an alternative to (\*) welfare economics he promoted with Martha Nussbaum. That economist presented an elegant proof of Arrow's impossibility theorem in *Collective Choice and Social Welfare*; he also developed his "entitlement approach" and examining the title events as being caused by people not having sufficient entitlements of food in the book *Poverty and Famines*. For 10 points, name this home country of Amartya Sen.

ANSWER: (Republic of) India [or Bharat] <Edited>

20. One of these objects is "lifted / in the crisp sand / that drives in the wind" and is told "you are caught in the drift" in an H.D. poem. Ezra Pound replaced this object with "dumb-born book" when adapting a poem about this object into the "Envoi" section of "Hugh Selwyn Mauberley." The speaker asks "Why is it no one ever sent me yet / One perfect limousine?" in a Dorothy Parker poem about this object. A line in "Little Gidding" says "The moment of [this object] and the moment of the yew-tree / Are of equal duration." The phrase (\*) "Time present and time past" appears in a poem whose first section describes a garden of these plants. This object titles a story in which the title baroness invokes Colonel Sartoris' name to avoid paying taxes. The poem "Sacred Emily" insists that "[this] is a [this] is a [this]." For 10 points, name these flowers in a repetitive quote by Gertrude Stein, which also title a Faulkner novel about one for "Emily."

ANSWER: roses [prompt on "flower(s)"; accept "Sea Rose"; accept "Go, Lovely Rose"; accept "A Rose for Emily"]

#### TIEBREAKER/EXTRA TOSSUPS

1. This specific body of water was subjected to a highly unusual extratropical cyclone on September 14, 1996. Salt has been mined on the shores of this body of water since the 19th century, centred on the town of Goderich. Of the over 1000 shipwrecks in this body of water, two are claimed to be the wreckage of Le Griffon, the first ship to travel it. The invasive zebra mussels affect water intake for nuclear generation on this body of water, which is the site of the world's currently largest nuclear generator by capacity, the (\*) Bruce Nuclear Generating Station, near the Bruce peninsula. The St. Mary's and St. Clair rivers connect this body of water to two others, and it is connected to another body of water by the Straits of Mackinac. It contains Georgian Bay, and has over 30,000 islands including the world's largest freshwater island, Manitoulin Island. For ten points, name this Great Lake between Michigan and Erie.

ANSWER: Lake Huron [accept Lake Michigan-Huron before "Mackinac"]

2. A rebellion against this man began upon its namesake arriving at Campbeltown and featured a force of 75 defeated at the Battle of Muirdykes; that rebellion featured John Murray opposing Archibald Campbell, the 9th Earl of Argyll, who was soon after beheaded. Another rebellion against his rule featured skirmishes against the Earl of Feversham and started when its namesake landed at Lyme Regis. That rebellion was ended by the (\*) Battle of Sedgemoor, after which he ordered Judge Jeffreys to carry out the Bloody Assizes. Before fleeing to France, he was said to have thrown his Great Seal of the Realm into the waters; that occurred prior to being defeated at the Battle of the Boyne by his eventual successor William of Orange. For 10 points, name this last Roman Catholic ruler of England, who in 1688 was overthrown in the Glorious Revolution.

ANSWER: James II of England [or James VII of Scotland; prompt on "James"]

## BONUSES

1. This city was founded with the assistance of a bilingual woman from the somewhat amusingly named Calamari tribe who the Spaniards called "Catalina." For 10 points each:

[10] Name this city on the Atlantic Coast, the principal port of Spanish slave importation into South America. Simon Bolivar wrote a "Manifesto" in this city outlining a path to success for his revolution.

ANSWER: **Cartagena** de Indias

[10] Cartagena put up an impressive resistance to a British fleet under Edward Vernon during this conflict, which Thomas Carlyle named in reference to a body part severed from a merchant ship's captain.

ANSWER: War of **Jenkins' Ear**

[10] In 1778, a governor of Cartagena named Juan de Torrezar helped carry out a project of this kind called the *catastro* at the behest of the Marquis of Ensenada. In Rome, officials responsible for projects of this kind would carry out a *lustrum* after these projects were completed.

ANSWER: a **census** [prompt on surveys or related terms] <Edited>

2. This philosopher borrowed greatly from the Earl of Shaftesbury in a work that argued that humans have a native faculty of moral sense, comparable to the aesthetic sense. For 10 points each:

[10] Identify this Scottish author of *Inquiry into the Original of our Ideas of Beauty and Virtue* and teacher of Adam Smith. His moral sense theory differs from that of Shaftesbury in that it grounds moral judgment in emotions.

ANSWER: Francis **Hutcheson**

[10] After an extended lull lasting into the late 20th century, the philosophy of emotions is again a resurgent field, with the most popular view being this one. In the meta-ethics debate, this view is generally taken to mean that moral judgments express propositions and have a truth value.

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

[10] The cognitivist theory of emotions is based on the understanding of emotions as judgments developed by members of this philosophical school. Marcus Aurelius and Epictetus figure among this school's members.

ANSWER: **Stoicism**

3. You are a medical student. Congratulations! Talk about your life, for 10 points each:

[10] Your residency matching process is an example of this optimization problem, which takes two groups and creates pairs with one member from each group such that no two individuals would prefer to switch partners.

ANSWER: **stable marriage** problem [or **stable matching** problem; prompt on partial answers]

[10] For most residencies, you will have to take the USMLE exam to match, but you will also take the COMLEX if you study this type of medicine, which uses OMM and is taught at med schools that do not award MD degrees.

ANSWER: **osteopathy** [or **osteopathic** medicine; prompt on **DO**]

[10] In order to be admitted into medical school in the first place, you had to take this standardized test. It was recently revamped to provide an average score of 500 instead of 25.

ANSWER: **MCAT** [or **M**edical **C**ollege **A**dmission **T**est] <Edited>

4. After war forces this character to quit his job as a mathematics professor, he joins the army under the Manpower Directorate. For 10 points each,

[10] Identify this character, who has a servant named Ugwu. After he fathers an illegitimate child with a village girl, his “illogically beautiful” wife Olanna sleeps with the Englishman Richard.

ANSWER: **Odenigbo**

[10] This other character funds an abortion for his lover, the *osu* Clara, by accepting bribes, a habit which eventually lands him in the trial that opens the novel. He is sent to England to study law by funds from his town’s local “Progressive Union.”

ANSWER: **Obi** Okonkwo [prompt on **Okonkwo**]

[10] This titan of Nigerian literature, who created Obi Okonkwo in *No Longer at Ease*, helped pave the way for later countrymen like Chimamanda Adichie to create characters like Odenigbo.

ANSWER: Chinua **Achebe**

5. Zollinger-Ellison syndrome can cause these phenomena to appear in the duodenum, and pirenzepine treats those in the stomach by antagonizing acetylcholine’s stimulation of stomach acid secretion. For 10 points each:

[10] Name these phenomena that can be viewed as lesions that erode away the skin or mucous membrane, whose gastric type can be caused by *Helicobacter pylori*.

ANSWER: **ulcers** [accept gastric **ulcers**]

[10] Aphthous ulcers and anal fistulas are associated with this disease, that can result in chronic diarrhea. Like ulcerative colitis, this is a type of inflammatory bowel disease and it most commonly affects the terminal ileum of the small intestine.

ANSWER: **Crohn’s** disease

[10] The monoclonal antibodies infliximab, adalimumab, and certolizumab are three medications that can be used to treat Crohn’s disease. Those three medications are inhibitors of this molecule, a cytokine involved in inflammation that binds with TRADD.

ANSWER: **TNF-alpha** [or **tumor necrosis factor-alpha**; prompt on partial answers]

6. Harry Graf Kessler predicted that this government was doomed for the start, though he still played a part in it by serving as ambassador to the newly created country of Poland. For 10 points each:

[10] Identify this German government during the 1920s, which gave way to the Nazis thanks to chronic political and economic instability.

ANSWER: **Weimar** Republic

[10] This Jewish businessman and Weimar-era statesman negotiated the Treaty of Rapallo with the Soviet Union. He was assassinated by the right-wing Operation Consul, after which he was seen as a democratic martyr.

ANSWER: Walter **Rathenau** [“ROT”-uh-“now”]

[10] Right-wing nationalists in the Weimar Republic promoted this myth, which alleged that Germany had lost World War I because its troops were betrayed by civilians and nefarious Jewish conspiracies on the home front. It’s most commonly referred to in English with a four-word name.

ANSWER: **stab in the back** legend/myth [or **backstab** legend/myth; or **Dolchstoß**legende] <Edited>

7. This saint is often portrayed standing in a tower with three windows, making reference to how her father Dioscorus kept her in a tower. For 10 points each:

[10] Dioscorus was struck by lightning for beheading which saint, who thus became the patron saint of explosives and artillerymen, among other things?

ANSWER: Saint **Barbara**

[10] Saint Barbara was venerated as one of the Fourteen Holy Helpers, another member of whom was this patron saint of England. He is well-known for slaying a dragon.

ANSWER: Saint **George**

[10] Another of the Fourteen Holy Helpers is this saint, who protected against sudden death. Since she consecrated her virginity to Jesus Christ, she refused the advances of the emperor Maxentius, who had her beheaded after her touch shattered the instrument meant to torture her.

ANSWER: Saint **Catherine** <Edited>

8. The optical depth is normalized with respect to this quantity so that it is equal to one after a photon has traveled this distance. For 10 points each:

[10] Name this quantity, symbolized  $l$  ['ell'] or  $\lambda$ , the average distance between collisions in a system.

ANSWER: **mean free path**

[10] When the mean free path is longer than the dimension of a medium, ballistic transport is observed, as in this single-atom thick material, first isolated by Andre Geim with scotch tape. It can be rolled into Carbon nanotubes.

ANSWER: **Graphene**

[10] The mean free path in this classical conductance model is proportional to the electrons drift velocity. This model predicted a linear relation between electric field and current and was later fixed by Sommerfeld.

ANSWER: **Drude** model

9. János Starker's first of his four recordings of this piece won the inaugural Grand Prix du Disque. For 10 points each,

[10] Name this piece by Zoltan Kodaly, a movement of which with a loud chord followed by *salterello* eighth notes in the verbunkos style. A later competition standard, this piece's first movement opens with a b minor chord that utilizes two open *scordatura* strings.

ANSWER: Kodaly's Solo *Sonata for Cello* in B minor [accept any answer indicating his **cello sonata**]

[10] Kodaly's cello sonata was a set piece for a 1957 cello competition held in Mexico city and named for this Catalan musician, who popularized Bach's cello suites with his recordings.

ANSWER: Pablo **Casals**

[10] This composer's cello sonatas are some of the first to give the cello a roughly equal part with the piano. His other string sonatas include "Kreutzer," written for violin.

ANSWER: Ludwig van **Beethoven**

10. For 10 points each, name some things about post-apocalyptic novels, none of which were written for young adults.

[10] An unnamed father reassures his son that they are the “good guys” as they travel across a post-apocalyptic America in this Cormac McCarthy novel.

ANSWER: *The Road*

[10] This Walter M. Miller Jr. novel is titled for the Jewish engineer who founds a monastic order dedicated to preserving human knowledge after a nuclear war destroys civilization.

ANSWER: A *Canticle for Leibowitz*

[10] Mark Spitz cleans up harmless zombies in Manhattan and suffers from Post-Apocalyptic Stress Disorder in this author’s novel *Zone One*. In his most recent novel, Cora and Caesar attempt to escape slavery via the title *Underground Railroad*, which is literally an underground railroad.

ANSWER: Colson Whitehead

11. The country’s film style is famous for “pillow shots,” shots of static objects as transitions between scenes. For 10 points each,

[10] Name this country, whose most famous postwar director had a characteristic style of “tatami shots”, filming from the level of a straw mat, and made *The Flavor of Green Tea Over Rice*.

ANSWER: Japan

[10] Name that director, who is most famous for the films *Late Spring*, *Early Summer* and *Tokyo Story*.

ANSWER: Yasujiro Ozu

[10] This Japanese director was fired by the Nikkatsu studio after the release of his baffling but wonderful film *Branded to Kill*, which starred his frequent collaborator Joe Shishido.

ANSWER: Seijun Suzuki <Edited>

12. The flash form of this process occurs when liquid undergoes a reduction in pressure by passing through a throttling device. For 10 points each:

[10] Name this change from a liquid to a gas, a type of vaporization contrasted with boiling in that it occurs on the surface of a liquid. It is performed in a rotary fashion by a Rotovap.

ANSWER: evaporation [accept flash evaporation; prompt on vaporization]

[10] Evaporation is preferable to boiling to remove volatile solvents because of this explosive process that can occur with rapid boiling. In applications where boiling is necessary, boiling chips can reduce this phenomenon by providing nucleation sites.

ANSWER: bumping

[10] Hertz and this physicist co-name an equation describing evaporation flux at fluid surfaces. His other work on fluids includes a namesake diffusion where the system length is smaller than the mean free path, causing his dimensionless number to be greater than one.

ANSWER: Martin Knudsen [accept Knudsen diffusion or Knudsen number]

13. Niall Ferguson posed six “killer apps” that allowed for the historic dominance of this cultural construct in a book whose subtitle contrastingly rhymes it with “The Rest.” For 10 points each:

[10] Name this cultural construct, encompassing cultures of European extraction.

ANSWER: the West [or the Occident]

[10] This recently deceased University of Chicago historian’s *The Rise of the West* advanced a view of cultural diffusion as the key element of human history. This writer’s *The Pursuit of Power* examines the interaction between technology, the armed forces, and society.

ANSWER: William Hardy McNeill

[10] McNeill also wrote a major study titled for these events “and Peoples.” In England, one of events indirectly boosted wages enough to prompt Edward III to issue the Statute of Laborers.

ANSWER: (bubonic) plagues [accept equivalents; accept Plagues and Peoples] <Edited>

14. Amilcare Ponchielli's opera *I Lituani* was based on a poem by this man about a Lithuanian pagan captured by the Teutonic Knights. For 10 points each:

[10] Name this poet of *Konrad Wallenrod*, most famous for a 12-book epic about the feuding Soplica [saw-PLÉE-tsa] and Horeszko [haw-RESH-ko] families titled *Pan Tadeusz*.

ANSWER: Adam **Mickiewicz** [mits-KAY-vitch]

[10] Adam Mickiewicz is considered to be one of this country's greatest poets and is one of its "Three Bards" - his *Pan Tadeusz* is set in the aftermath of its Third Partition.

ANSWER: **Poland**-Lithuania [accept any historical incarnation of Poland]

[10] This Polish novelist, also an Egyptologist, wrote a novel entirely in French consisting of interwoven stories set that often feature the gypsy chief Avadoro; that novel is *The Manuscript Found in Saragossa*.

ANSWER: Jan **Potocki**

15. The original authors of this bonus requested that you "refrain from innuendo" while answering these questions about magical spears. For 10 points each:

[10] The Gae Bulg, was wielded by this Ulster hero, whose severe anger management issues resulted in him killing his son when the latter didn't give his name. He gained his own name by killing a dog.

ANSWER: **Cuchulainn** [or **Setanta**]

[10] This famously well-balanced spear was crafted by the Sons of Ivaldi as part of a scheme to cut a goddess's golden hair.

ANSWER: **Gungnir**

[10] This other deity wields a javelin known as Vel and rides a peacock into battle. This deity's heads represent *siddhis*, supernatural powers that can be attained through devotion and meditation.

ANSWER: **Karthikeya** [or **Murugan** or **Kartikaya**] <Edited>

16. Along with Charles Cotesworth Pinckney and John Marshall, this man was one of the diplomats sent to France in the XYZ Affair. For 10 points each:

[10] Name this second Vice President of James Madison, who was satirized in an 1812 cartoon depicting a distorted Essex County.

ANSWER: Elbridge Thomas **Gerry**

[10] Elbridge Gerry was the ninth governor of this state, whose other governors have included Edward Everett and Benjamin Butler and future president Calvin Coolidge.

ANSWER: **Massachusetts** [accept anything that refers to **Massholes**]

[10] Elbridge Gerry was succeeded as governor of Massachusetts by this man, who, as governor, opposed the War of 1812 and tried to sign a separate peace with Britain to end the War of 1812 during the Hartford Convention, whereby he would give northern Maine to Great Britain.

ANSWER: Caleb **Strong** <Edited>

17. In the preface to this novel's second edition, its author boldly responded to critics, stating that she didn't write it "to ingratiate myself with the Press and the Public," but "to tell the truth." For 10 points each:

[10] Name this novel written as a series of letters from Gilbert Markham to Jack Halford. Its middle section consists of Helen Graham's diary entries describing her ultimately failed marriage to Arthur Huntingdon.

ANSWER: The *Tenant of Wildfell Hall*

[10] *The Tenant of Wildfell Hall* was written by this woman, who described a governess working for the Bloomfield and Murray families in *Agnes Gray*. Both of those works were published under her pseudonym Acton Bell.

ANSWER: Anne Brontë [prompt on "Brontë"]

[10] Anne Brontë created this fictional island with her sister Emily, which provided the subject of Emily's poems "Geraldine, the moon is shining" and "Lord of Elbë, on Elbë Hill", which were once thought to be personal allegories. Many of the stories they set here concern the dashing Julius Brenzaida.

ANSWER: Gondal

18. The October part of this work portrays its patron's Paris residence, the Hotel de Nesle. For 10 points each:

[10] Name this illuminated manuscript prayer book produced by the Limbourg brother. This work's depiction of the calendar ends with the *Anatomical Zodiac Man*, which is unique for its astrological themes.

ANSWER: Les *Tres Riches Heures* du Duc de Berry (of the Duke of Berry)

[10] The *Tres Riches Heures* are painted on vellum, a type of fine-quality parchment used for medieval manuscripts and made from the skin of this young animal.

ANSWER: calf (accept clear-knowledge equivalents like "baby cow", do not accept anything to do with adult cattle)

[10] The *Tres Riches Heures* are held in The Cloisters, a subsidiary of New York's Met Museum. The Cloisters are also home to this illuminated manuscript produced by Jean Pucelle. It is largely decorated with grisaille and is named for its dedicatee, the third wife of Charles IV of France.

ANSWER: Hours of *Jeanne d'Evreux* <Edited>

19. This thinker took strides into political activism with the essay "The Responsibility of Intellectuals," arguing that people in academia hold major responsibility for atrocities in Vietnam. For 10 points each:

[10] Name this political activist, whom others may know better as a linguist who wrote *Syntactic Structures*.

ANSWER: Noam Chomsky

[10] Chomsky and Edward Herman co-wrote this book, which continues Alex Carey's studies of corporate propaganda. It proposes that media operate through five filters of editorial bias, the last of which was changed from "anti-Communism" to "anti-terrorism" in a 2001 update.

ANSWER: *Manufacturing Consent: The Political Economy of the Mass Media*

[10] The title of *Manufacturing Consent* borrows from a phrase coined by this intellectual, who got into debates with John Dewey over his books *Public Opinion* and *The Phantom Public*.

ANSWER: Walter Lippmann <Edited>

20. For 10 points each, answer the following about situations in which math can literally save your life.

[10] In *The Strategy of Conflict*, Thomas Schelling applied this mathematical field to situations like nuclear war or hostage crises. This field's namesake scenarios include the stag hunt and the prisoner's dilemma.

ANSWER: game theory

[10] This mathematician posited a situation in which aliens threatened to destroy Earth unless we could calculate the values of seemingly small Ramsey numbers, to show how difficult it is. This prolific mathematician spoke of a "Book" in which God wrote the most elegant proofs.

ANSWER: Paul Erdős [AIR-dush]

[10] To prove he was a professor and not a communist spy, Igor Tamm was supposedly forced at gunpoint to find the remainder when truncating a Taylor series, so if you're ever in that situation, you should know that this theorem is used to derive the Lagrange form of the remainder. Taylor's theorem reduces to this basic result when the degree is 0.

ANSWER: mean value theorem [anti-prompt on "Rolle's theorem"]

#### EXTRA BONUSES

1. Though Mike Nichols is probably most famous for directing *The Graduate*, he got his start directing plays on Broadway. For 10 points each:

[10] Mike Nichols won four Tony awards directing plays by this man, including *Plaza Suite* and *The Prisoner of Second Avenue*. The original Broadway production of one of this playwright's works featured Walter Matthau as Oscar Madison and Art Carney as Felix Ungar.

ANSWER: Neil Simon

[10] Nichols' first feature film, an adaption of this play, is one of only two films to have been Oscar-nominated in every single eligible category. The film stays mostly true to this Edward Albee play, though unlike the play, it doesn't take place entirely in George and Martha's house.

ANSWER: *Who's Afraid of Virginia Woolf?*

[10] Dan pretends to be Anna in an online adult chatroom to play a practical joke on Larry, and all four main characters lie and cheat on each other in this English playwright's *Closer*, which in 2004 was made into a film directed by Mike Nichols. This man is currently directing an acclaimed revival of Tom Stoppard's *Travesties*.

ANSWER: Patrick Marber