

2023 IQBT Undergraduate Championship

Questions written by: Mike Cheyne, Erik Christensen, Kurtis Droge, Joseph Krol, James Lasker, Leo Law, Jonathan Magin, Ben Miller, Matt Weiner, and Chandler West

Questions edited by: Will Alston, Matt Bollinger, Emmett Laurie, John Lawrence, Evan Lynch, Eric Mukherjee, and Ryan Rosenberg

Round 1 – Tossups

1. **This tradition was divided into northern and southern schools that differed in emphasizing “gradual teachings” or “sudden teachings.” A text by one leader of this tradition asks, if a mirror has no stand, where is the dust? The founder of this tradition said “you have attained my marrow” to his successor, who earlier cut off his arm to show devotion. The first tea plants grew after the founder of this school fell asleep while (*) staring at a wall for seven years and cut off his eyelids. That “blue-eyed barbarian” who founded this school taught 18 forms to the monks of the Shaolin temple. This tradition was founded by Bodhidharma (“boh-dee-DAR-mah”), who is the subject of several entries in the *Gateless Gate*, a collection of koans (“KOH-anz”). For 10 points, name this school within Mahayana Buddhism that emphasizes meditation.**

ANSWER: Zen Buddhism [or Chan Buddhism; prompt on Buddhism or Mahayana Buddhism]

2. **A construct used to predict the results of this process can be “expanded” using selective pressure incorporation. *Mycoplasmata*, the *Candida*-containing C·T·G clade, and the human mitochondrion have nonstandard codes for this process, whose standard version may have arisen via a frozen accident according to Francis Crick. The results of this process are predicted using a circular plot in which the center is divided into four slices and surrounded by two concentric rings, or in a table where the left and top display the (*) first and second position, respectively. The presence of inosine (“IN-uh-seen”) in the third position allows wobble pairing during this process, in which a loop of tRNA pairs with a codon on mRNA. For 10 points, name this process in which RNA is used as a template to synthesize proteins.**

ANSWER: translation [prompt on anything involving protein synthesis]

3. **An author with this surname wrote a poem whose speaker feels “the kick and leap of gold grasshoppers at my brow” after comparing insomnia to spring, “surprising / and many petaled.” That author with this surname reworked a Federico Garcia Lorca line as “I want her green life” in the poem “From the Desire Field.” In a novel by an author with this surname, Socorro jumps in front of a train, leading her daughter Belicia to be raised by La Inca. A (*) Mojave (“moh-HA-vay”) author with this surname won a 2021 Pulitzer for *Postcolonial Love Poem*. Another author with this surname wrote about a *fukú* curse that haunts a family under the Trujillo regime in a novel mostly narrated by Yuniors de las Casas. For 10 points, give this surname of the Dominican-American author of *The Brief Wondrous Life of Oscar Wao*.**

ANSWER: Diaz [accept Natalie Diaz or Junot Diaz]

4. **Trying to save electoral support, this leader signed a one year ban on Black immigrants at the behest of Frank Oliver before losing power anyway. This leader referenced Aesop in wanting to use the “sunny way” to solve a crisis triggered by Thomas Greenway’s reforms. In Parliament, this man delivered a speech against the expulsion from parliament of a rebel leader who later lost the Battle of Batoche (“bah-TOASH”). In a speech at Massey Hall, this leader declared that while the 19th century was America’s, the (*) 20th would be his country’s. This “Great Conciliator” triggered Henri Bourassa’s resignation by sending volunteers to the British during the Second Boer War. This leader settled the Manitoba Schools Question and served as Liberal Party leader during World War I. For 10 points, name this first French-Canadian Prime Minister of Canada.**

ANSWER: Sir Wilfrid Laurier (“lorry-YAY”)

5. **A composer’s first sonata for this instrument begins in 3/4 (“three-four”) time with the piano playing the quarter notes “C, up to F, down to E-flat,” doubled across three octaves. Two of these instruments play the upper two parts in the beginning of the second movement of Brahms’s Third Symphony. A trio, two sonatas, and a quintet are Brahms’s four chamber pieces for this instrument, all of which were written for (*) Richard Mühlfeld. Those pieces are Brahms’s only chamber works to feature a woodwind instrument, and were inspired by hearing Mühlfeld play the F-minor first concerto for this instrument by Carl Maria von Weber. Brahms used both the B-flat and A varieties of, for 10 points, what instrument, the Classical symphony orchestra’s only standard single-reed woodwind?**

ANSWER: clarinet [accept B-flat clarinet or A clarinet; reject any other variants such as “bass clarinet”]

6. **The Supreme Court clarified circumstances under which this sort of evidence is admissible in *U.S. v. Jakobetz*, which used the *Williams* test. Much of this kind of evidence was falsified by an Oklahoma City official nicknamed “Black Magic,” Joyce Gilchrist. The FBI’s S·W·G·D·A·M maintains standards for this kind of evidence, which was examined nine years after the initial trial of Gary Dotson. A Leicestershire (“LESS-ter-sheer”) kidnapper named (*) Colin Pitchfork was convicted based on this kind of evidence using methods developed by Alec Jeffreys. RFLP and STP analysis are used on this kind of evidence in a non-touch-related process called “fingerprinting.” For 10 points, what kind of evidence may be analyzed with PCR and sequencing techniques?**

ANSWER: DNA evidence [or genetic evidence; accept DNA fingerprinting; prompt on scientific testimony; prompt on blood or semen or hair by asking “what kind of evidence is it used to obtain?”; reject “expert testimony”; reject “fingerprints”] (Dotson was the first person exonerated using DNA evidence, which wasn’t available during his initial trial; Pitchfork was the first person convicted using it.)

7. **A company operating one of these things was almost bankrupted when John Randel Jr. sued it for breach of contract after Benjamin Wright had maneuvered to get him fired. A planned meeting at Mount Vernon about one of these things grew into the Annapolis Convention of 1786. Jesse Hawley planned one of these things from a debtors’ prison by publishing anonymous essays under the name “Hercules.” The oldest one of these things still in use in the U.S. was overseen by Patrick Henry to divert (*) merchants from the Great Dismal Swamp. Gouverneur (“govern-EER”) Morris was president of a commission for one of these projects cutting through Mohawk Valley that was championed by Governor Dewitt Clinton. In 1825, Albany and Buffalo were linked by, for 10 points, an example of what manmade structures named for Lake Erie?**

ANSWER: canals [accept the Chesapeake & Delaware Canal Company or Erie Canal or Great Dismal Swamp Canal]

8. The legalist school of scholarship on this sector of the economy posits a collaboration between regulators and “mercantile interests,” while dualist scholars place it in opposition to other sectors. In his book on the “global rise” of this sector, Robert Neuwirth popularized calling it “System D.” In *The Other Path*, economist Hernando de Soto presents Peruvian methods of allocating property rights in this sector as an “answer to terrorism.” This sector’s size is usually estimated (*) indirectly using metrics such as electricity consumption, discrepancies between national income and expenditure, and cash in circulation. It is usually about 10 to 15% of the economy in O·E·C·D countries, but 30 to 40% in developing ones. For 10 points, what sector consists of unregulated, untaxed economic activity?

ANSWER: **black** market [or **informal** economy; or **shadow**; or **grey**; or **underground**; prompt on **illegal** sector or **crime**; reject “organized crime”] (Neuwirth’s book is *The Stealth of Nations: The Global Rise of the Informal Economy*)

9. This author described “When evening quickens faintly in the street” and himself “turning / Wearily, as one would turn to nod good-bye to Rochefoucauld” (“rosh-foo-KOH”) in a poem mocking readers of the title newspaper. This author described “grimy scraps” of “newspapers from vacant lots” and “The notion of some infinitely gentle / Infinitely suffering thing” in a set of four linked poems that begins “The winter evening settles down... / Six o’clock.” This author of “The (*) Boston Evening Transcript” repeats “there will be time” in a poem that mentions “a hundred indecisions” and “a hundred visions and revisions.” This author of “Preludes” wrote a poem that asks “how should I presume?” and “Do I dare / Disturb the universe?” For 10 points, who wrote “The Love Song of J. Alfred Prufrock”?

ANSWER: T. S. **Eliot** [or Thomas Stearns **Eliot**]

10. When this quantity is less than 0.05 times the wavelength, 3.13 times the square root of this quantity gives the wave speed. The hyperbolic tangent of the term, “this quantity times two- π over wavelength,” appears in the general wave speed equation. Plotting this quantity on the y -axis, and the speed of sound on the x -axis, is used to find the SOFAR (“so-far”) channel. Sounding measures this quantity, which was previously done via (*) lead (“led”) lines but is now done by multibeam echo-sounders. This quantity is plotted on bathy-metric charts. Atmospheric pressure, plus the product “this quantity times density times g ,” equals the total pressure on a submerged object. For 10 points, name this quantity, which is maximal at Challenger Deep in the Marianas Trench, and is often measured in fathoms.

ANSWER: **depth** of the ocean [prompt on h ; accept reasonable equivalents describing how far down something is]

11. A composer affiliated with this visual art movement painted a ghostly, brownish face in his self-portrait, *The Red Gaze*. Another artist from this movement was inspired by Byzantine icons to create his *Mystical Heads* series. A painter from this movement wrote the sentence “And all being is flaming sorrow” on the back of a painting of a forest fire characterized by clashing (*) diagonals. Painters in this movement included Alexey von Jawlensky (“yav-LEN-skee”) and an artist who analyzed the music-like effects of different colors on the psyche in *Concerning the Spiritual in Art*. Another artist from this movement created many zoological paintings like *The Yellow Cow* and *The Fate of the Animals*. For 10 points, name this group of Expressionist painters including Franz Marc and Wassily (“VASS-uh-lee”) Kandinsky.

ANSWER: Der **Blaue Reiter** [or the **Blue Rider**; prompt on German **Expressionism** before it is read]

12. In a Sumerian tale, a god of this phenomenon harasses a priest who is out fishing, who then takes Ea's ("AY-uh's") advice to not eat or drink while doing penance. Adapa fights a god of this phenomenon, which is directed for disruptive purposes by demons led by Pazuzu. Gilgamesh is aided by thirteen examples of this phenomenon during his battle with Humbaba. A Greek god of this phenomenon fathered Achilles's (*) horses Balius and Xanthus; another such god fathered 12 fast horses with the mares of Erichthonius and the brothers Zetes ("ZEE-tees") and Calaïs ("KAH-luh-yiss"). Notus and Eurus ("YEW-russ") are gods of this phenomenon, which is contained in a magic bag given to Odysseus. For 10 points, the Anemoi personify what phenomenon, including the "west" one known as Zephyrus?

ANSWER: winds [accept "Adapa and the South Wind"; accept anemoi before "Anemoi"; prompt on storms]

13. Patrick Seale identified this family's support by a new "state bourgeoisie" that was often described by the word *tufaili*, or "parasite." The Makhlof ("mock-LOOF") family rose to prominence through association with this family, which greatly expanded the use of Tadmor Prison to torture political opponents. The Mercedes S-Classes driven by mercenaries contracted by this family led to their nickname, the *Shabiha*. The Defense Companies, a paramilitary force led by a member of this family, (*) Rifaat, massacred people during a Muslim Brotherhood uprising in Hama. A member of this family overthrew Salah Jadid during the Corrective Revolution, pivoting the direction of the non-Iraqi Ba'ath party and beginning rule by an Alawite minority. For 10 points, name his family of Syrian dictators Hafez and Bashar.

ANSWER: al-Assad [or Hafez al-Assad or Bashar al-Assad or Rifaat al-Assad]

14. One of these phenomena first described by Evert Verwey produces checkerboard patterns due to charge ordering. Rescaling using the Kramers–Wannier duality allows determination of the onset of one of these phenomena. Charge density waves propagate during one of these phenomena described by Rudolf Peierls ("PYE-erls"). Vortices unbind in the two-dimensional XY model during one of these phenomena. These phenomena feature a (*) discontinuity in an n th-order derivative classification scheme for them developed by Paul Ehrenfest. These phenomena are characterized by spontaneous broken symmetry and a change to or from zero in the order parameter. First-order examples of these phenomena have an associated latent heat. 10 points, name these phenomena where states of matter transform into others, such as in melting and freezing.

ANSWER: phase transitions [or phase changes or changes of state or phase transformations; prompt on spontaneous symmetry breaking until "spontaneous"; accept Peierls transition; prompt on Peierls distortion]

15. *Note to players: specific word required.*

A theater press officer prophesied that an author would become known for this feeling if "his generation would praise" his work "while mine would [...] dislike it." That *Daily Telegraph* piece by George Fearon was about a work whose protagonist says that he learned this feeling and helplessness "at an early age," making him know "more about - love... betrayal... and death, when I was ten years old than you will probably ever know in your life." A group named for this feeling included (*) Shelagh ("Sheila") Delaney and was often conflated with "kitchen sink realism." This feeling partly titles a play in which the actress Helena stays with her unhappily married friend Alison, whose husband rails against the "establishment." For 10 points, what feeling partly titles a play about Jimmy Porter by John Osborne?

ANSWER: anger [or word forms such as angry; or *Look Back in Anger*; or Angry Young Men]

16. This man is the protagonist of a musical film whose villains' song was cut at Richard Nixon's request. Cut lyrics from a song titled for this man call him a "nuisance with no sense" who'll "die of irrelevance." A song about this man includes the lyrics "All alone / Watch them run / They will tear each other into pieces / Jesus Christ, this will be fun!" This man titles a song in which one character claims he "doesn't know a participle from a predicate" and another refuses "to use the pen in (*) Pennsylvania." This man is the subject of "I Know Him," King George's final song in *Hamilton*. In another musical, this man sings "Is Anybody There?" and is the subject of the song "Sit Down, John." For 10 points, name this protagonist of the musical *1776*, who sings "Till Then" with his wife, Abigail.

ANSWER: John Adams [prompt on Adams; reject "John Quincy Adams"]

17. The second essay in George Saunders's *A Swim in the Pond in the Rain* analyzes a story by this author in which rough people in a tavern are uplifted and transformed by a singing contest. In a story by this author, a broken axle leads to an encounter with a mystical dwarf nicknamed "the Flea" who rebukes the narrator for his cruelty to birds. In a third story by this author, the narrator listens to five young boys tell (*) scary stories around a fire, before telling us that one of the boys, Pavel, died from falling off a horse. His story "Kasyan ("KAS-ee-an") from the Beautiful Lands" is part of a collection that allegedly convinced Alexander II to free the serfs and that also includes "Bezhin Meadow" and "Hamlet of the Shchigrovsky ("she -GROV-skee") District." For 10 points, name this Russian author of *A Sportsman's Sketches*.

ANSWER: Ivan Sergeevich Turgenev (The first story is "The Singers")

18. A chapter from a book by this thinker opens by comparing the rationales behind the illegal actions of Oskar Schindler, Operation Rescue, opponents of Thomas Gennarelli, and opponents of the Franklin dam. Building on Joseph Fletcher, this thinker argued that self-awareness and a sense of the future and past are what distinguish "persons" from "non-persons." With Francesca Minerva and Jeff McMahan, this thinker co-founded the *Journal of (*) Controversial Ideas* in 2021. He endorsed supporting the charity evaluator GiveWell in his book *The Life You Can Save*, which builds on the "child drowning in a pond" thought experiment from his "Famine, Affluence, and Morality." For 10 points, the term "species·ism" was coined by what Australian utilitarian philosopher, the author of *Animal Liberation*?

ANSWER: Peter Singer [or Peter Albert David Singer] (The first two sentences are from *Practical Ethics*.)

19. A sigma-one-two term appears in two of three differential equations developed to understand this analytical technique by Ionel ("YOH-nell") Solomon. Hepta-fluorinated FOD ("fodd") ligands bound to europium can be used to improve the resolving power of this technique. Some broad signals in this technique can be removed by adding a small amount of a molecule with a molecular weight of 20. A re-focusing (*) pulse of 180 degrees follows a 90-degree pulse in the spin echo experiment in this technique. The Fourier ("foor-YAY") transform of the free induction decay signal gives the chemical shift in this technique, which is generally expressed in parts per million. Deuterated ("DEW-tuh-rated") solvents are often used in, for 10 points, which analytical technique, that determines molecular structure by flipping spin states using an external magnetic field?

ANSWER: nuclear magnetic resonance spectroscopy [or NMR spectroscopy; prompt on magnetic resonance imaging or MRI; the molecule is D₂O or heavy water]

20. *Description Acceptable.*

This event led to the writing of the December Constitution, which built on concessions previously offered by the October Diploma and the February Patent. Arthur Griffith advocated emulating this event in the British Isles in the book *A Parallel for Ireland*. A man living in exile in Turin denounced this event as “the death of our nation” in the Cassandra letter. The Honvéd (“HONE-vayd”) force was created by this event, which ended the era of “Passive Resistance” under (*) Ferenc Deák (“DAY-ack”). Friedrich Ferdinand von Beust (“boyst”) helped negotiate this event, which dubbed a region Transleithania (“trans-lye-TAY-nia”). This event recognized an internally autonomous government under Gyula Andrassy (“JOO-luh ANN-drah-shee”) in the wake of defeat in the Seven Weeks War. For 10 points, identify this 1867 event that reorganized Hapsburg lands as a “Dual Monarchy.”

ANSWER: **creation of Austria-Hungary** [or the **Ausgleich**; or **Kiegyezés**; or the **Compromise of 1867** before "1867" is read; or the **creation of the Austro-Hungarian Empire**; or the **creation of Österreich-Ungarn**; or the **creation of Österreichisch-Ungarische Monarchie**; or the **creation of Österreichisch-Ungarisches Reich**; accept **die Gründung der** in place of "the creation of" in any answer]

Round 1 – Bonuses

1. J. L. Motley originated the phrase “when he died, the little children cried” in a discussion of this man, the first victim of an assassination by handgun. For 10 points each:

[10m] Name this ruler, who was aided in a rebellion by the Sea Beggars. He founded a new royal house after inheriting a title from René de Chalon (“shah-LON”).

ANSWER: **William the Silent** [or **William I** or **William of Orange** or **William the Taciturn** or **Willem van Oranje** or **Willem de Zwijger**; prompt on **William** or **Willem**]

[10h] Prior to the revolt, William learnt of another king’s plans to eradicate Protestantism in the Low Countries while a hostage during this treaty’s negotiation. Christina of Denmark presided over this treaty’s negotiations.

ANSWER: Treaty of **Cateau-Cambrésis** (“caht-oh cahm-BRAY-see”) [or Peace of **Cateau-Cambrésis**]

[10e] The Dutch Revolt was fought against this Spanish King, who sent the Spanish Armada to overthrow Elizabeth I.

ANSWER: **Philip II** (“the second”) of Spain [or **Philip the Prudent** or **Felipe II** or **Felipe el Prudente**; prompt on **Philip** or **Felipe**]

2. An entry in a set of “Elegiac” poems in this form notes that “those paint sorrow best -who feel it most.” For 10 points each:

[10m] Name this form that was revived in popularity by British Romantic poets. John Keats’s poem “When I Have Fears that I May Cease to Be” is in this form.

ANSWER: **sonnets**

[10h] This poet’s 1784 *Elegiac Sonnets* contributed to the British sonnet revival. She included footnotes about fossils in her long poem *Beachy Head*; and, like Clara Reeve and Ann Radcliffe, she wrote proto-Romantic Gothic novels, such as *Emmeline*.

ANSWER: Charlotte Turner **Smith**

[10e] Charlotte Smith wrote a sonnet about this animal, saying “songstress sad, that such my lot might be; / To sigh and sing at liberty, like thee.” John Keats wrote an ode to this bird.

ANSWER: **nightingale** [accept “To a **Nightingale**”; accept “Ode to a **Nightingale**”]

3. Since commissioning this architect in 2000, the London organization Serpentine has commissioned a different architect to create a temporary summer pavilion every year. For 10 points each:

[10m] Name this architect of the Guangzhou (“gwang-joh”) Opera House and the London Aquatics Centre, the latter of which was built for the 2012 Summer Olympics.

ANSWER: Zaha **Hadid** (“huh-DEED”)

[10h] The 2017 pavilion was designed by Diébédo Francis Kéré (“d’yuh-BED-oh francis KAY-ray”), an architect born in this African country, who became the first African winner of the Pritzker Prize in 2022.

ANSWER: **Burkina Faso**

[10e] The 2003 Serpentine Pavilion was designed by Oscar Niemeyer (“nee-uh-MAH-yer”), who is best known for working with Lucio (“loo-SEE-oh”) Costa and designing many buildings in this South American planned capital city.

ANSWER: **Brasilia**

4. By an equivalent statement of the axiom of choice, every space of these entities has a basis. For 10 points each:
[10e] Name these quantities which have both magnitude and direction, and are contrasted with scalars.

ANSWER: **vector**

[10m] Two answers required. For a linear map T from a vector space V to a vector space W , one of these objects is the set of vectors in V that go to zero, and the other is the set of nonzero vectors in W that equal T -of- x for some x in V . The sum of their dimensions is equal to the dimension of V .

ANSWER: **kernel** and **image** [or **nullspace** and **image**]

[10h] The set of linear transformations between a vector space and a scalar field form their own vector space, given this name. For a vector space V , this space is denoted V -star.

ANSWER: **dual** space

5. This deity drowned a race made out of wood because they failed to worship the gods. For 10 points each:

[10h] Name this wind and storm god who created the world by saying the word “Earth.” This god is likely identical to the one-legged God K.

ANSWER: **Huracan** [or **Hunraqan**; or **U K’ux Kaj** or **Heart of Sky**]

[10e] The story of Huracan drowning the manikin race appears in the *Popul Vuh* (“poh-POLL WOOK”), a compilation of the myths of this civilization.

ANSWER: **K’iche’ Maya** [accept either underlined part]

[10m] In the *Popul Vuh*, the Hero Twins journeyed to this place to avenge the death of their father and uncle. They defeated the lords of this location in a ballgame.

ANSWER: **Xibalba** (“shee-bal-BAH”) [prompt on Mayan underworld or Mayan hell or similar answers]

6. William Blake criticized the influence of this work of art in an engraving that surrounds it with densely-packed, mystical aphorisms like “Christianity is art and not money.” For 10 points each:

[10h] Name this work of art also satirized in an engraving after Titian (“TISH-un”) depicting its subjects as monkeys. A study of this work rejects the doctrine of *ut pictura poesis*, claiming that visual art represents the “pregnant moment.”

ANSWER: **Laocoön** (“lay-OCK-uh-wahn”) group [or **Laocoon and his Sons**]

[10e] This artist painted an agonized Laocoön with his eyes rolling back in his version of the scene, which sets it in front of the city of Toledo. This Cretan-born artist also painted *The Burial of the Count of Orgaz*.

ANSWER: El **Greco**

[10m] Three snakes represent Fenianism, the Eastern Question, and the Roman Question in a caricature by this artist based on the Laocoon group. This artist’s caricature *Gargantua* depicts Louis Philippe (“lwee fee-LEEP”) being fed bags of coins.

ANSWER: Honore **Daumier** (“dome-YAY”)

7. In a novel’s postscript, this character dies by touching an electrified fence while disguised as a woman, after the Battle of the Sand Belt, which took place in a location named for him. For 10 points each:

[10h] Name this character who fails to stop his dwelling from being blown up with a lightning rod, fails to restore the flow of water in a leaky well, and fails to kill the protagonist by stealing his lariat during combat with a foe.

ANSWER: **Merlin** [accept Brer **Merlin**]

[10e] Merlin is a recurring antagonist in this American author’s novel *A Connecticut Yankee in King Arthur’s Court*.

ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**]

[10m] One year before Twain published *A Connecticut Yankee in King Arthur’s Court*, Edward Bellamy published this time travel novel in which Julian West falls asleep and wakes up in a utopian Boston in the year 2000.

ANSWER: **Looking Backward: 2000–1887**

8. The digits of pi can be reproduced by counting a series of these events between two objects that differ in mass by exact orders of magnitude. For 10 points each:

[10e] Name these physical events where multiple bodies exert forces on one another over a short duration. Kinetic energy is conserved in the elastic type of these events.

ANSWER: **collisions** [or elastic **collisions**]

[10m] The elasticity or inelasticity of a collision can be determined from this quantity, which is 0 for a completely inelastic collision and 1 for a perfectly elastic collision.

ANSWER: **coefficient of restitution** [or word forms like **restitution coefficient**, or **CoR**]

[10h] This French mathematician and politician developed a namesake conjecture stating that there are noncollision singularities in solutions to the n -body problem where n is greater than or equal to 4.

ANSWER: Paul **Painlevé** (“pan-luh-VAY”) [or the **Painlevé** conjecture]

9. The oldest sub-Saharan city partially shares its name with this city and is one of its “four old towns” along with Hambarkétolo, Kaniana and Tonomba. For 10 points each:

[10m] Name this city, whose first Islamic king, Koi Konboro, ordered the construction of a Great Mosque made of adobe.

ANSWER: **Djenné** (“jen-ay”) [or **Djenné**-djennol or **Jenné**-jenno]

[10e] The best-known sculptures found at Djenné-djenno (“jen-ay-jen-oh”) are of men hugging their legs with disease pustules on them, and were made of this material. Qin Shi Huang (“cheen sher hwong”) was buried with soldiers made of this material.

ANSWER: **terracotta**

[10h] The only people to work with iron before those of Djenné-djenno were the people of this culture, which is named for the Nigerian town where their terracotta sculptures were found.

ANSWER: **Nok** culture

10. Answer the following about the televangelist Oral Roberts, for 10 points each:

[10e] Roberts originally led churches that were a part of a charismatic movement named for this holiday, which celebrates an incident in the Book of Acts in which the Holy Spirit entered believers and they spoke in tongues.

ANSWER: **Pentecost** [accept **Pentecostalism**]

[10m] In 1968, Roberts became a member of this largest mainline Protestant denomination in the U.S. A 2020 schism has divided this church, mainly over the issue of same-sex marriage.

ANSWER: **United Methodist** Church [or **UMC**; prompt on **Methodist** or wordforms]

[10h] Roberts frequently mentioned one of these objects when discussing faith. In the gospels, Jesus said a person with faith equivalent to this object can tell the mountains to move.

ANSWER: **seed** [or mustard **seed**; accept **seed** faith]

11. Answer some questions about the peacock’s tail and what it means for evolution, for 10 points each:

[10e] The peacock’s tail is a canonical example of sexual selection, as discussed in this evolutionary biologist’s *On the Origin of Species*.

ANSWER: Charles **Darwin**

[10h] Amotz Zahavi used the peacock’s tail as an example of this principle, in which females prefer males with costly signals, because they demonstrate increased fitness.

ANSWER: **handicap** principle

[10m] This scientist and Marlene Zuk (“zook”) proposed that sexual ornaments are signals of parasite resistance. This scientist also names a rule stating that the coefficient of relatedness times benefit should be greater than cost.

ANSWER: William Donald **Hamilton**

12. Frederick Douglass was the last president of an institution whose name begins with this word, which collapsed after its money was unscrupulously invested by Jay Cooke & Company. For 10 points each:

[10m] Give this word which names a short-lived Congressionally-created “Savings Bank.” Oliver Otis Howard led a different organization whose common name begins with the plural form of this word.

ANSWER: **freedmen** [or **Freedman** Savings Bank or **Freedman**’s Savings and Trust Company or **Freedmen’s** Bureau]

[10h] Among the trustees of Freedman’s Savings Bank was this man, who led the charge to place “In God We Trust” on US money. Andrew Jackson and this man are depicted on alternate versions of the \$10,000 bill.

ANSWER: Salmon **Chase**

[10e] Chase was portrayed as an abolitionist who believed the whole fight was won at abolition by this author of *Black Reconstruction*. This historian and sociologist also wrote *The Souls of Black Folk*.

ANSWER: William Edward Burghardt **Du Bois** [or W. E. B. **Du Bois**]

13. This piece opens with a harp playing a D twelve times to represent a clock striking midnight. For 10 points each:

[10m] Name this tone poem, based on a Henri Cazalis poem, which prominently features a solo violin playing a tritone on open strings.

ANSWER: ***Danse macabre***

[10e] *Danse macabre* was composed by this Frenchman who also composed *The Carnival of the Animals*.

ANSWER: Camille **Saint-Saëns** (“san-SAHNS”) [Charles-Camille **Saint-Saëns**]

[10h] To allow the violin to play the tritone using open strings, Saint-Saëns instructs the violinist to tune one of the strings down a semitone, to this note. Correct spelling required.

ANSWER: **E-flat** [or **E-flat** 5; do not prompt on or accept "E" or "D-sharp"]

14. This philosopher purportedly dissected his lover’s dog while it was still alive to search for its soul. For 10 points each:

[10e] Name this philosopher who concluded that animals possess only the body component of the namesake mind-body dualism that he introduced in his *Meditations on First Philosophy*.

ANSWER: René **Descartes** (“day-CART”) [or Renatus **Cartesius**]

[10h] This other French philosopher went further and declared that all animals, including humans, are soulless machines in his 1747 treatise *Man a Machine*.

ANSWER: Julien Offray de **La Mettrie** (“may-TREE”)

[10m] This other philosopher claimed that animal behavior is proof of the rational association of ideas in the section “Of the Reason of Animals,” from a text that also claims “[R]eason is, and ought only to be the slave of the passions.”

ANSWER: David **Hume** [or David **Home**]

15. In one play, a character with this profession warns a professor that “Philology leads to calamity!”, but is ignored. For 10 points each:

[10h] Name this profession. In another play by the same author, a character with this profession claims that Elizabeth and Donald are not husband and wife and is pushed offstage while reciting a poem that lists various items that “caught fire.”

ANSWER: **maid** [accept **maidservant**; accept **housemaid**; accept **parlormaid**; accept **housekeeper**; prompt on servant, domestic worker, or domestic help]

[10e] Those maids appear in *The Lesson* and *The Bald Soprano*, plays by this absurdist Romanian playwright.

ANSWER: Eugène **Ionesco** [or Eugen **Ionescu**]

[10m] Maids named Solange and Claire role-play the murder of their boss in a play by this French playwright, who wrote a play set in a role-playing-filled brothel, while a revolution rises outside.

ANSWER: Jean **Genet** (Those plays are *The Maids* and *The Balcony*)

16. Flinders Petrie found this city after farmers mining for *sebakh* revealed remnants of its Greek period, though the mining almost entirely destroyed the walls of its Great Temenos. For 10 points each:

[10h] Name this city, the only *emporium* in Egypt, which was granted to Greek mercenaries by Psamtik I. The *Deipno·sophistae* is a dialogue written by an author from this city, Athenaeus.

ANSWER: **Naucratis**

[10m] Strabo wrote that Naucratis was a colony of this city, which was led by Aristagoras during the Ionian Revolt.

ANSWER: **Miletus**

[10e] After visiting Naucratis, this ruler tasked one of its men, Cleomenes, with founding a city named after this ruler that contained a Ptolemaic era Lighthouse and a Great Library.

ANSWER: **Alexander** the Great [or **Alexander** III of Macedon; accept **Alexandria**]

17. A 2004 study by Posmontier and Horowitz contrasts the barebones treatment of these people in “technocratic” societies with increased care in “ethnokinship” societies. For 10 points each:

[10h] Name these people, who, in Europe, were archaically subjected to a form of confinement called “lying-in.” In both Latin American and Arab societies, these people are advised to rest and isolate for forty days.

ANSWER: **new mothers** [accept descriptions of **mothers of newborn babies**; prompt on **mothers**; reject “women” or “pregnant women”]

[10e] Newborn mothers are susceptible to this condition, a period of prolonged sadness that is longer and more intense than the “baby blues” that occur one to three days after birth.

ANSWER: **postpartum depression** [or **PPD**; prompt on **depression**]

[10m] Stern and Kruckman hypothesized that postpartum depression exists as one of these disorders in the United States. These disorders are specific to a particular location, and examples include “ghost sickness” in some Native American societies.

ANSWER: **culture-bound** disorder [or **culture-specific** disorder or **culture-bound** syndrome or **culture-specific** syndrome]

18. Regio·selectivity upon addition of hydrogen halides (“HAY-lydes”) to asymmetric examples of this functional group is explained by Markovnikov’s rule. For 10 points each:

[10e] Name this simple functional group whose stereo·chemistry is determined using *cis-trans* or *E-Z* notations. The simplest molecule with this group has formula C₂H₄.

ANSWER: **alkene** (“AL-keen”) [or **olefin**; prompt on “double bond” or “carbon-carbon double bond”; prompt on “ethene”]

[10h] Determining whether an alkene is an *E* or *Z* isomer requires application of this set of rules, otherwise used to define *R* and *S* stereo·centers. Substituents with larger atomic numbers are given priority in these rules.

ANSWER: **Cahn–Ingold–Prelog** rules [or **CIP** rules; or **CIP** priority convention]

[10m] In the Houk (“how’k”) model, epoxidation of an alkene proceeds asymmetrically due to the presence of an allylic-1,3 form of this interaction. The bond angles in cyclopropane cause a large amount of the “ring” form of this interaction.

ANSWER: **strain** [accept allylic **strain**, allylic-1,3 **strain**, A-**strain**, ring **strain**]

19. The erosion-carved fossil dunes in this state's Al Wathba preserve were a major filming location for *Star Wars: The Force Awakens*. For 10 points each:

[10e] Name this largest constituent emirate of the U·A·E. It contains and is named for the U·A·E's capital city.

ANSWER: Emirate of **Abu Dhabi**

[10m] The 2021 adaptation of *Dune* was filmed in Abu Dhabi's Liwa Oasis, just east of this southern region of the Arabian desert. This massive erg stretches from the U·A·E to the Hejaz mountains.

ANSWER: The **Empty Quarter** [or **Rub' al-Khali**]

[10h] The film *Furious 7* features races in Abu Dhabi's deserts, as well as around this massive mosque in downtown Abu Dhabi, where worshippers pray on the world's largest knotted carpet.

ANSWER: **Sheikh Zayed** ("shake ZAH-yed") Grand Mosque [or Jāmi' Ash-**Shaykh Zāyid** Al-Kabīr]

20. At the end of the story "In the Wine Shop," the narrator is shocked to learn that an old friend is teaching his pupils books of this philosophy. For 10 points each:

[10h] A sleepless character who recalls having trodden on an employer's account sheet twenty years ago deliriously sees "words between the lines" in a book about what philosophy?

ANSWER: **Confucianism** [or **Kǒngjiào**; or **Ruism**; or **Rújiā**; or **Rújiào**; or **Rúxué**]

[10m] The main character of Lǚ Xùn's "A Madman's Diary" imagines that a book on Confucian "Virtue and Morality" commands him to perform this action, which he insanely believes has been widespread in Chinese society for centuries.

ANSWER: **cannibalism** [or **eating people**; prompt on **eating**]

[10e] The protagonist of Lǚ Xùn's story "Storm in a Teacup" is obsessed with rereading this Luō Guànzhōng ("kwahn-tsung") classic, titled for the feuding states of Wú, Wèi, and Shǔ.

ANSWER: **Romance of the Three Kingdoms** [or **Sānguó Yǎnyì**]