

2023 IQBT Undergraduate Championship

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Round 18 – Tossups

1. In a series of plays from this country, a bride duels her fiancé while disguised as the leader of an enemy kingdom, but the two recognize each other and reconcile after she draws his blood using her hairpin as a weapon. A theatrical sub-genre from this country prominently features a group of four ugly servant-clowns, who attend the hero. That sub-genre from this country has a name partly meaning “skin.” The romance of **Chandra Kirana and the prince** (*) Panji inspired a series of plays from this country. All-night shows are a hallmark of a theatrical genre from this country, which uses leather puppets in *kulit* performances. *Wayang* shadow puppetry developed in, for 10 points, what country where the character of Semar is sometimes held to represent the guardian spirit of the island of Java?

ANSWER: Republic of Indonesia

2. In one book, this thinker tells the reader to “test everything against the standard of Christ” when reading pagan Roman writers. This non-Aristotelian thinker argued that friendship cannot be the highest good, because it is founded on ignoring faults, in a chapter praising *phil·autia*, or “self-love.” The phrase “In the land of the blind, the one-eyed man is king” was popularized by this author’s collection of over 4,000 sayings from antiquity, the *Adagia* (“uh-DAH-juh”). This man urged the pursuit of *philosophia* (*) *Christi* in a set of aphorisms responding to Machiavelli, his *The Education of a Christian Prince*. Thomas More was the dedicatee of a satirical encomium by this man, whose title goddess is the offspring of Plutus and Youth. For 10 points, name this Dutch humanist who wrote *In Praise of Folly*.

ANSWER: Desiderius Erasmus (“ih-RAZ-muss”) [or Erasmus of Rotterdam]

3. Johnson Matthey introduced a H-frame to a device used to measure this quantity which uses mercury cobalt thio·cyanate as a standard calibrant. That device for measuring this quantity superseded the Gouy (“gwee”) balance and is named for Dennis Evans. Measuring the AC version of this quantity with a namesake probe can determine the superconducting critical temperature, at which this quantity has a value of (*) -1 . This quantity is equal to a constant C divided by the quantity “absolute temperature minus Curie temperature” in the Curie–Weiss law. Negative and positive values for this quantity define dia·magnetic and para·magnetic materials, respectively. For 10 points, name this quantity symbolized chi (“kye”), which represents how much of a material will become magnetized in an applied field.

ANSWER: magnetic susceptibility [prompt on “chi” before mentioned; reject “electric susceptibility”]

4. It's not the Netherlands, but Michael Roberts's "Military Revolution" focuses on this country, whose leader expanded the allotment system to easily mobilize his army. Reforms pioneered by this country include eliminating the caracole from cavalry tactics and reorganizing infantry into significantly more linear brigades, such as the Blue Brigade. The Dutch Maurice of Nassau influenced a leader of this country, which directed the Heilbronn League until it was defeated at the Battle of (*) Nordlingen. Gottfried Pannenheim died fighting this country at a battle where their leader died charging into heavy fog. The *hakkapeliitta* ("HAH-kuh-puh-LEE-tuh") light cavalry was used by this country, which defeated Count von Tilly at the Battle of Breitenfeld. For 10 points, name this country led during the Thirty Years War by Gustavus Adolphus.

ANSWER: Sweden [or Swedish Empire]

5. An "American" version of a concept of this book was explored in a work by Robert Jewett and John Shelton Lawrence. This book describes a process of abandoning "Sin," the id, and "God," the superego, through an encounter called "atonement" or "at-one-ment" with the "father." This book, which inspired a 2021 feminist response by Maria Tatar, identifies "The (*) Belly of the Whale" and the bestowal of a "boon" as important parts of a process whose name is taken from *Finnegan's Wake*. Stages labeled "Departure," "Initiation," and "Return" are passed by the title figure of this book, which inspired George Lucas's *Star Wars*. For 10 points, a "monomyth" known as the title character's "journey" is proposed in what classic of comparative mythology by Joseph Campbell?

ANSWER: *The Hero with a Thousand Faces*

6. Excavations of this civilization's Mount E and Mount AB suggest it may have declined due to overpopulation in the 3C phase of its Integration Era, which was succeeded by the Cemetery H culture. An early phase of this civilization is named for the 37 mound sites found at Damn Sadat, which is contemporary with another of its predecessors, Kot-Diji. The most common sign in this civilization's script, the jar, frequently appears at the end of lines. (*) Standardized bricks were used at Lothal by this civilization, whose trading colony of Shortugai contained lapis lazuli mines. Mortimer Wheeler excavated this civilization's "Great Bath" and unearthed the dancing girl sculpture. For 10 points, name this civilization with cities like Mohenjo-Daro, which is named for a Punjabi river.

ANSWER: Indus River Valley civilization [or Harrapan civilization]

7. The University of Cambridge and the University of Washington are the only institutions to operate instruments for this technique's "single crystal adsorption" form. It's not gas chromatography, but microliter titers ("TY-ters") can be used to determine the stoichiometry ("STOY-kee-AH-muh-tree") of ligand binding in one form of this technique. An indium sample is used as a standard calibration for another form of this technique, which produces a line graph with peaks and troughs at (*) phase transitions and is often paired with TGA. "Isothermal titration" and "differential scanning" are both forms of this technique, whose simplest form uses a pressurized stainless steel "bomb." For 10 points, name this technique that measures the heat evolved in a chemical reaction.

ANSWER: calorimetry ("CAL-uh-RIM-uh-tree") [accept single crystal adsorption calorimetry, isothermal titration calorimetry, or differential scanning calorimetry; accept bomb calorimeter; prompt on "SCAC", "ITC" or "DSC"]

8. In 2022, Tony DeLuca won re-election to this state's house, despite having died of leukemia in October. A 2022 Senate candidate in this state employed two field organizers whom he had pardoned while chair of this state's Board of Pardons. An African-American frontrunner in this state's 2022 Senate GOP primary fell to third, after photos showed her at the January 6th protests. Joanna McClinton became the first female Speaker of this state's House after Mark (*) Rozzi resigned; Rozzi had been a bi-partisan choice while control of this state's House was flipped due to vacancies. A Senator from this state checked himself into Walter Reed for clinical depression treatment while recovering from a stroke suffered during his campaign. For 10 points, in which state's 2022 Senate election did Mehmet Oz lose to John Fetterman?

ANSWER: Commonwealth of Pennsylvania

9. The first movement of this composer's piano concerto is interrupted by a nocturne-like section in A-flat major and 6/4 time, marked "andante espressivo." That piano concerto by this composer begins with a *tutti* ("TOOT-tee") chord, three bars of solo piano playing, two more *tutti* chords, and then a woodwind chorale led by the oboe. The initial failure of this composer's fourth symphony has been blamed on the absence of Felix Mendelssohn, who successfully premiered this man's first two symphonies. This composer's piano concerto is often (*) paired on recordings with a later piano concerto in the same key by Edvard Grieg. This composer reused a theme from his *Kreisleriana* in the finale of his *Spring Symphony*. For 10 points, name this composer whose piano concerto was premiered by his wife, Clara Wieck ("veek").

ANSWER: Robert Schumann [prompt on Schumann]

10. This author inspires Will Andrews to travel to the title Kansas town in John Williams's novel *Butcher's Crossing*. Frederick Martin stole and distributed some of the letters this American author wrote to Thomas Carlyle over their 38-year correspondence. This author, who called dwelling too much on Christ the person one of the two defects of "Historical Christianity," declared in one essay that "To be great is to be misunderstood." This man, who is called "A Greek head on right Yankee shoulders" in (*) James Russell Lowell's *A Fable for Critics*, attacked the Unitarian beliefs of his Harvard audience in an 1838 speech and proclaimed "whoso would be a man must be a nonconformist." For 10 points, name this author of the "Divinity School Address" and the essay "Self-Reliance."

ANSWER: Ralph Waldo Emerson

11. Samples for this procedure are prepared using a solution of Sorensen's phosphate or cacodylate ("KACK-uh-DILL-ayt") buffer with glutar-aldehyde. A scintillator in a Faraday cage comprises the Everhart-Thornley detector used in one form of this technique. Lipids are preserved in this technique by post-fixing with osmium tetroxide. In one form of this technique, a grid is used to hold the sample after it is sectioned by an (*) ultra-microtome, while in another form, the sample is sputter-coated with gold. The apparatus for this technique consists of electromagnetic lenses over an aperture, which focuses a beam of negatively-charged particles on the sample. For 10 points, name this form of microscopy that has transmission and scanning types, which allow magnification much greater than light microscopes.

ANSWER: electron microscopy [or EM; or wordforms such as electron microscope; accept Scanning Electron Microscopy or Transmission Electron Microscopy or Scanning Transmission Electron Microscopy or SEM or TEM or Cryo-EM or STEM; prompt on microscopy or wordforms]

12. A palace for holders of this title held the Great Altar of Gratitude, which memorialized a neighbor his country had adopted the policy of *sadae* (“SAH-day”), or serving the great, towards. Six ancestors of a holder of this title are praised in the poetic epic *Songs of Flying Dragons*. After facing opposition, a holder of this title abolished the Office of Censors and initiated the first of his country’s “scholars’ calamities.” Officials hired by a holder of this title to hold the Three (*) Offices formed the Sarim (“SAH-rim”) faction, who rehabilitated the reputation of the “six martyred ministers.” The Hall of Worthies was created by a holder of this title who commissioned a writing system based on the shape of the mouth. For 10 points, name this title held by the inventor of the Hangul alphabet, Sejong (“SAY-jong”) the Great.

ANSWER: King of Joseon (“JOH-sun”) [accept monarch of Joseon; prompt on King of Korea]

13. Goldberg and Morrison examined a link between this condition and social class, and concluded that this condition caused people to slowly slide down in social class, in the first explication of the drift hypothesis. A higher number of exposed nicotinic receptors in the brain of people with this condition may explain why approximately 90% of people with this condition smoke tobacco. Julian Jaynes has controversially argued that this condition is the vestige of how the (*) “bi·cameral mind” of ancient humans experienced “guiding voices.” People with this condition are more likely to heed “command” statements that seem to come from an external source. For 10 points, visual hallucinations and “hearing voices” are often in present in people with what condition with a “paranoid” variety?

ANSWER: schizophrenia [accept paranoid schizophrenia; prompt on schizoaffective disorder]

14. In a story by this author, a narratologist sees the apparition of a ghoulish while delivering a conference paper in Turkey on Patient Griselda. In a novel by this author, a protagonist follows the words “Dolly keeps a Secret / Safer than a Friend” to find a packet of letters hidden in the doll’s cot of a bedroom. This author of “The Djinn in the Nightingale’s Eye” wrote a novel that opens with a character stealing documents that fell out of a copy of Vico’s *The New Science* in the London Library. In that novel by her, James (*) Blackadder helps the protagonists stop Mortimer Cropper from escaping with letters that he robbed from an author’s grave. For 10 points, scholars Maud Bailey and Roland Michell uncover a secret romance between two Victorian poets in what British author’s novel *Possession*?

ANSWER: A. S. Byatt [or Antonia Susan Duffy; or Antonia Susan Drabble]

15. Interest in this musician resurged in the 1980s when this musician’s solos were transcribed and published as a book by James Dapogny. A recording led by this musician begins with church bells ringing at noon as two men notice an approaching funeral. Gregory Hines won his only Tony Award for playing this musician in an autobiographical musical. A song in which this man’s nickname comes between “The Original” and “Blues” is one of the earliest published jazz compositions. A musical is titled for the (*) *Last Jam* of this man, who claimed to have invented jazz during his Library of Congress interviews with Alan Lomax. He wrote the songs “Wolverine Blues” and “Black Bottom Stomp,” which he recorded with his band, the Red Hot Peppers. For 10 points, name this Dixieland pianist nicknamed “Jelly Roll.”

ANSWER: Ferdinand “Jelly Roll” Morton [or Ferdinand Joseph LaMothe; prompt on Jelly Roll]

16. This process creates a power-law tensor spectrum. Models of this process are divided into upward-sloping “large field,” downward-sloping “small field,” and “hybrid” types. Evidence for this process includes a slightly-less-than-unity spectral index. This process went through about 60 *e*-folds, followed by reheating, and creates gravitational waves which imprint B-modes on the cosmic microwave background. One model states that this process occurs via tunneling out of a positive energy (*) false vacuum. This process solves the horizon, flatness, and monopole problems. This process began 10-to-the-negative-36th seconds after the initial singularity, and was originally posited by Alan Guth (“gooth”). For 10 points, name this faster-than-light expansion which occurred a fraction of a second after the Big Bang.

ANSWER: cosmic inflation [prompt on Big Bang or things like expansion of the universe]

17. An author with this first name wrote a poem beginning “On my school notebooks / On my desk and the trees / On the sand on the snow / I write your name,” titled “Liberty.” Another author with this first name wrote a poem that opens by describing high-heel shoes struggling with a long dress. That author with this first name analyzed Tristan Corbière (“core-B’YAIR”) and five other Symbolist poets in a book whose title popularized the phrase (*) “accursed poets,” or “poètes maudits.” That author with this first name described the “long sobs” of the “violins of autumn” in his “Chanson D’Automne.” This first name is shared by a poet who took the surname Eluard and a poet who fired a revolver at his lover, Arthur Rimbaud. For 10 points, give this first name of a poet with the surname Verlaine.

ANSWER: Paul [accept Paul Eluard; accept Paul Verlaine; accept Eugène Grindevle]

18. A Hubert Grimme study about the “Riddle” of this painting claims that the molding at the bottom depicts the lid of a coffin. Johann Joachim Winckelmann called this painting the best modern imitation of Greek “noble simplicity.” In the background of this Dresden-based painting, dozens of blue cherub faces emerge from the clouds. A kneeling Saint Barbara looks downward, out of the frame, on the right of this painting. At the bottom of this painting, a (*) tiara topped with an acorn, an emblem of the Della Rovere family, lies on a wooden parapet. Julius II (“the second”) was the likely model for a pope depicted in this painting, at the bottom of which two bored, mischievous-looking cherubs are resting. For 10 points, name this Raphael painting in which the title saint looks up towards the Virgin Mary.

ANSWER: Sistine Madonna [or Madonna di San Sisto]

19. A portrait of the founder of this order appeared miraculously at Soriano Calabro. A meeting at River Forest led this order to adopt the Roman Rite, but their breviary still uses the term “totem duplex.” The *Religiosam vitam* (“ray-lee-ghee-OH-sahm VEE-tahm”) recognized this order, which was locally recognized by the Bishop of Toulouse after its founder debated the Cathars (“KATH-arz”). A lay member of this order wrote the *Dialogue of Divine Providence* and had a mystical (*) marriage with Jesus. A Marian apparition at Prouille (“proo-EE”) inspired the founder of this order, the patron saint of astronomers, to invent the Rosary. Albertus Magnus and Thomas Aquinas (“uh-KWYE-nuss”) were members of this order, which emphasizes education and the intellect. For 10 points, name this Catholic order called the Order of Preachers, whose monks wear a black cape over a white habit.

ANSWER: Dominicans [or Ordo Praedicatorum; or blackfriars; or Jacobins; accept Order of Preachers or OP before “Preachers”]

20. Annie Londonderry pretended to be this writer while investigating the “Wild Man” of Massachusetts; she also used this writer’s name during her dispatches from her bike trip around the world. Amanda Mathews sculpted five bronze heads for a monument next to the Octagon dedicated to this author of “The Puzzle Girl.” After buying *Cosmopolitan*, John Brisben Walker tasked Elizabeth Bisland with beating this author to a feat, which Bisland recorded in the book (*) *In Seven Stages*. Joseph Pulitzer supported this author’s decision to get herself interred on Blackwell’s Island. This author of *Ten Days in a Mad House* popularized the genre of “stunt girl” reporting. For 10 points, name this journalist who wrote of her record-breaking travels in *Around the World in Seventy Two Days*.

ANSWER: Nellie Bly [or Elizabeth Jane Cochran]

Round 18 – Bonuses

1. Answer the following about classical influences on Greco-Buddhist art, for 10 points each.

[10m] The Buddha's topknot in Gandharan art is often compared to the bound hair of this statue, modeled after an original by Leochares ("lee-oh-CARE-eez"). This statue depicts a nude god with a robe draped over his arm, just after firing an arrow.

ANSWER: **Apollo Belvedere** [or **Belvedere Apollo**; or **Apollo of the Belvedere**; or **Pythian Apollo**; prompt on Apollo]

[10h] Buddhist depictions of the converted demoness Hariti were influenced by depictions of this popular Hellenistic goddess. Eutychides of Sicyon's ("SICK-ee-on's") sculpture of this goddess introduced the "mural crown" into Greek art.

ANSWER: **Tyche** [accept **Fortuna**]

[10e] Depictions of the *bodhisattva* Vajrapani draw on sculptures of this Greek mythological hero. In a sculpture named for the Farnese ("far-NAY-zay") family, this hero has the skin of the Nemean Lion draped over his club.

ANSWER: **Heracles** [or **Hercules**]

2. Speaking of the Duke of Wellington, Robert Peele complained that "No man has any influence with him. He is led by women." Name some things about them, for 10 points each:

[10e] Wellington's friend Lady Jersey featured as Zenobia in *Endymion*, the first novel by this Prime Minister and longtime rival of William Gladstone.

ANSWER: Benjamin **Disraeli**

[10h] Wellington was good friends with Frances Cecil, whose husband held this noble title. Her son, Robert Gascoyne, held this title and pursued a policy of "splendid isolation" during his three terms as Prime Minister.

ANSWER: Marquess of **Salisbury** [or Lord **Salisbury**]

[10m] This country's ambassador's wife, Princess Lieven, counted Wellington among her many powerful friends. The Second Anglo-Afghan War began after this country sent envoys to Sher Ali Khan.

ANSWER: **Russian Empire** [or **Russia**]

3. A Tang dynasty-style temple in Singapore claims to hold a sacred example of these objects found in a collapsed stupa. For 10 points each:

[10m] Name these objects. A temple in Sri Lanka's city of Kandy houses a sacred one of these objects said to have belonged to the Buddha.

ANSWER: **teeth** [or **tooth**; accept Temple of the Sacred **Tooth** Relic; prompt on **relics** or **śarīra**]

[10e] The Porto Cathedral houses a tooth attributed to Apollonia, who became the patron of dentists after her teeth were pulled out in this city. Christians in this city may have burned a great library maintained by the Ptolemies.

ANSWER: **Alexandria** [or al-**Iskandariyah**; accept Apollonia of **Alexandria**]

[10h] This complex has a privy chambers and Third Courtyard that house several relics of Muhammad, including his Blessed Mantle, his Holy Banner, and one of the four teeth that he lost at Uhud.

ANSWER: **Topkapi** Palace [prompt on the **Seraglio**]

4. For 10 points each, answer the following about allegations of sexual improprieties in American plays.

[10e] This author of *The Little Foxes* wrote about Mary Tilford, who falsely accuses two teachers of carrying on an illicit lesbian affair, in her play *The Children's Hour*.

ANSWER: Lillian (Florence) **Hellman**

[10m] In this play by John Patrick Shanley, Sister Aloysius accuses a priest of having an inappropriate relationship with an African-American altar boy, but the truth of the allegations remains uncertain even after the priest admits "There are things I can't say."

ANSWER: **Doubt**

[10h] In this two-person play, Carol accuses her egotistical professor John of sexual harassment and assault, culminating in John violently beating her in his office as his life unravels.

ANSWER: **Oleanna** (by David Mamet)

5. These receptors are responsible for sensing odorants. For 10 points each:

[10m] Name this kind of receptor, which usually has seven trans-membrane helices. These receptors activate a namesake type of protein that hydrolyzes GTP to activate downstream signals.

ANSWER: **GPCR** [or **G protein-coupled receptors**]

[10e] This hormone activates a G protein-coupled receptor. This hormone is released from the medulla on a pair of glands sitting atop the kidneys, and is responsible for activating the fight-or-flight response.

ANSWER: **epinephrine** [or **adrenaline**]

[10h] One method of desensitizing GPCRs is by phosphorylation by GRKs, which then allows these proteins to bind. These proteins bind to and block the cytoplasmic face of GPCRs, and subsequently trigger internalization.

ANSWER: **arrestins**

6. Answer the following about the landmark 1966 Coleman Report, for 10 points each:

[10m] The Coleman Report was the first wide-scale study of racial discrimination in these places. A Paul Willis book discusses how these places reproduce and shape the structure of industrial towns in the West Midlands.

ANSWER: high **schools** [accept **public schools** or **private schools**]

[10e] The Coleman Report pioneered the usage of this method for school research. Recently, this method has begun to shift from phone to online, where researchers use software such as Qualtrics.

ANSWER: **survey** research [accept **surveys**; accept **polls**; accept **questionnaires**]

[10h] One of the issues Coleman encountered in producing the report was this statistical problem where many predictor variables exhibit a high degree of correlation with each other.

ANSWER: **multi-collinearity**

7. These two characters are given as the mother and father of Telegonus in most sources. For 10 points each:

[10m] Name these two characters. Hermes gives one of these characters an herb called *moly* to protect him from the other's powers.

ANSWER: **Odysseus** AND **Circe**

[10e] In some obscure tales, Odysseus instead fathers Telegonus by this nymph, who waylays Odysseus on her island for seven years before letting him return to Ithaca.

ANSWER: **Calypso**

[10h] Later Greek authors don't agree on whether Odysseus fathered this king with either Circe or Calypso. Roman sources instead give this king as a son of Faunus and Marica, and describe the fury Alecto interfering with his attempted marriage-alliance.

ANSWER: **Latinus** (The marriage-alliance in question is between Lavinia and Aeneas.)

8. In such works as *The Implied Reader* and *The Act of Reading*, this theorist developed a framework in which readers actualize meanings in the texts they experience. For 10 points each:

[10h] Name this German literary theorist. Along with Hans Robert Jauss, he was the leading figure of the Constance school of reader-response criticism.

ANSWER: Wolfgang **Iser**

[10m] In *The Act of Reading*, Iser said that this novel “introduced divergent textual perspectives which resist integration and so devalue their own individual authenticity.” Its title character wards off the bandit Sherif Ali and the pirate “Gentleman” Brown.

ANSWER: **Lord Jim** (by Joseph Conrad)

[10e] Iser’s phenomenology in *The Act of Reading* draws upon ideas from *The Imaginary*, a book by this French existentialist author of *No Exit*.

ANSWER: Jean-Paul **Sartre** [or Jean-Paul Charles Aymard **Sartre**]

9. The stability of the various oxidation states of a substance can be depicted on a Frost diagram. For 10 points each:

[10m] A Frost diagram’s y-axis is the reduction potential, which for n transferred electrons is equal to the negative of the Gibbs free energy divided by the product of n and this constant, approximately equal to 96500 Coulombs per mole.

ANSWER: **Faraday** constant [prompt on e times N -sub- A or “the elementary charge multiplied by Avogadro’s number” or similar]

[10e] As oxidation state stability varies with this quantity, individual lines on a Frost diagram must have a defined value of it. This measure of relative acidity is defined on a logarithmic scale and often lies between 0 and 14.

ANSWER: **pH**

[10h] A concave section on a Frost diagram indicates that two reactants with different oxidation numbers are able to undergo this type of reaction, to form a species with an intermediate oxidation number.

ANSWER: **com·proportion·ation** [or **syn·proportion·ation**; reject “disproportionation”, the opposite]

10. Archaeologists call one king of these people Casper, since they haven’t yet deciphered his name glyph, which resembles Casper the Friendly Ghost. For 10 points each:

[10e] Name these Mesoamerican people who built the cities of Palenque (“pah-LEN-kay”), Calakmul (“KAH-lock-mool”), and Tikal.

ANSWER: **Mayas** [or Mayans; accept K’iche or Yucatec Maya]

[10h] Altar Q lists this city’s King Eighteen Rabbit, who built a “living mountain” for sacrifices and was beheaded by its rival city of Quirigua. This city was ruled by the Yax Kuk Mo dynasty and allied with Tikal against Calakmul.

ANSWER: **Copán**

[10m] Other colorfully-named kings from Maya records include Spearthrower Owl, who conquered Tikal while leading this non-Maya city. The Pyramids of the Sun and Moon are near this city’s Avenue of the Dead.

ANSWER: **Teotihuacan** (“teh-oh-tee-wah-KAN”)

11. In Hans Krahe's ("KRAH-huh's") monograph on "Old European" examples of this kind of word, the stem *isar- is used to derive the modern words Isar ("EE-zar"), Isère ("ee-ZAIR"), and Eisack ("EYE-sock"). For 10 points each:

[10h] Identify these words. Examples of them based on the root *sal- include IJssel ("AY-shul") in the Netherlands and Saale ("ZAH-luh") in Germany.

ANSWER: **names** of **rivers** [or **hydronyms**; accept Old European **hydronymy**; prompt on **names** by asking "of what things?"]

[10e] These two rivers, whose similar names likely come from a root meaning "to flow," are connected by a canal near Dijon. One flows past the city of Strasbourg, the other past Lyon.

ANSWER: **Rhine** AND **Rhône** (The root is PIE *(s)rew-, whence English *stream*.)

[10m] The stem *dānu- ("DAH-noo") is likely related to the names of the four largest European rivers that reach the Black Sea. The Danube is one of them; name the other three, which flow through Tiraspol, Kyiv, and Rostov.

ANSWER: **Dnieper** ("NEE-per") AND **Dniester** ("NEES-tur") AND **Don** [accept **Dnipro** for "Dnieper"; accept **Nistru** or **Danestra** or **Tyras** for "Dniester"]

12. In a story about the alcoholic Janet Dempster, Edgar Tryan takes up this profession after driving Lucy to prostitution and suicide. For 10 points each:

[10h] Name this profession also shared by amateur biologist and card player Camden Farebrother in another work by the same author.

ANSWER: **clergyman** [or **priest**; or **pastor**; or **vicar**]

[10e] Those clergymen appear in the books *Scenes of Clerical Life* and *Middlemarch* by this Victorian author.

ANSWER: George **Eliot** [or Mary Ann **Evans**]

[10m] This Eliot character from a different novel is often read as a "spiritual autobiography" of Eliot. Philip Wakem loves this woman, who neglectfully kills the rabbits of her brother Tom, by forgetting to feed them.

ANSWER: **Maggie** Tulliver [accept **Maggie Tulliver**; prompt on **Tulliver**] [from *The Mill on the Floss*]

13. This instrument's creator had an unrequited love for Clara Rockmore, who became one of its first virtuosos. For 10 points each:

[10e] What electronic instrument, named after its Russian creator, is played by moving one's hands around two antennas to produce electrical tones? It was often used to make spooky noises in sci-fi films.

ANSWER: **theremin** ("THAIR-uh-min") [or **aetherphone**; or **thereminophone**; or **termenvox**; or **thereminvox**]

[10m] A fingerboard theremin, sometimes called a "theremin cello," was used by this composer in his piece *Equatorial*. This French composer wrote the 1936 solo flute piece *Density 21.5* for Georges Barrère ("zhorz bah-RAIR").

ANSWER: Edgard **Varèse** ("vah-REZZ") [or Edgard Victor Achille Charles **Varèse**]

[10h] This composer collaborated with Léon Theremin in the design of the Rhythmicon, which some have called the first drum machine. This composer also wrote what he called "string piano" pieces, which require the performer to directly manipulate the piano's strings with their hands.

ANSWER: Henry **Cowell** [or Henry Dixon **Cowell**]

14. Henry-René d'Allemagne *Histoire de jouets* (“east-WAOR de ZHOU-ay”) depicts three of these machines created by Jacques de Vaucanson (“voh-cahn-sohn”), a piper, a flutist, and a duck which would simulate pooping a piece of corn. For 10 points each:

[10m] Name these mostly self-operating machines, some of which appear in the Banu Musa’s *Book of Ingenious Devices*. Henri Maillardet (“on-ree my-are-day”) created one of these machines that writes poetry.

ANSWER: **automata** [or **automaton**]

[10h] A mechanized Jesus Christ which might bite its lip or frown, the Rood of Grace, was kept in this county’s Boxley Abbey. Wat Tyler led rebels from this county during the Peasants’ Revolt.

ANSWER: **Kent**

[10e] A queen from this family stole the Tommaso brothers from her uncle so they could design hydraulic automata for the gardens at the Chateau at Saint-Germain-en-Laye. Lorenzo the Magnificent was from this family.

ANSWER: **Medici** [or Marie de **Medici** or Lorenzo de **Medici**]

15. The variance of this distribution is equal to one twelfth times the square of the difference between its minimum and maximum values. For 10 points each:

[10m] Name this statistical distribution with a constant probability density function.

ANSWER: **uniform** distribution

[10e] If the null hypothesis is true, a “value” named for this letter follows the uniform distribution. If low enough, usually below 0.05, that value denoted by this letter suggests rejecting the null hypothesis.

ANSWER: **p** [accept **p**-value]

[10h] This problem seeks to estimate the maximum of a discrete uniform distribution from a sample without replacement. One example of this problem is using serial numbers to estimate the number of V2 rockets built.

ANSWER: **German tank** problem

16. A paper by Hallo and Van Dijk translates a poem by this author, which is dedicated to a goddess who is the “foremost one” and the “Devastatrix of the lands.” For 10 points each:

[10h] Name this author of around forty temple hymns, two of whose poems are usually translated as “The Great-Hearted Mistress” and “The Goddess of Fearsome Powers.”

ANSWER: **Enheduanna** (“en-hed-oo-AHN-uh”)

[10m] The vast majority of the lines of Enheduanna’s “The Exaltation of Inanna” contain a pause known by this Latin term, which is denoted in modern scholarship with a pair of vertical lines.

ANSWER: **caesura**

[10e] Both Akkadian and Sumerian, the two main languages used in Mesopotamia in Enheduanna’s time, employed this writing system named for the wedge-shaped impressions that appeared on clay tablets.

ANSWER: **cuneiform**

17. In this interpretation, quantum decoherence explains the subjective appearance of wavefunction collapse. For 10 points each:

[10m] Name this interpretation of quantum mechanics advanced by Hugh Everett. In this theory, when an experiment is conducted, every possible outcome occurs.

ANSWER: **many-worlds** interpretation [or **MWI** or **relative-state formulation**, or **many-universes** interpretation, or the theory of the **universal wavefunction**; prompt on “**multiverse**”]

[10e] One method of illustrating the differences between different interpretations of quantum mechanics is this thought experiment, in which the title creature is in a superposition of alive or dead until you open the box.

ANSWER: **Schrödinger’s cat**

[10h] A key issue with any interpretation of quantum mechanics is reproducing a rule derived by this physicist, which states that the probability density function equals the square modulus of the wavefunction.

ANSWER: Max **Born** [or **Born**’s rule]

18. This phrase was popularized by analyst Kevin Philips, the author of the book *The Emerging Republican Majority*. For 10 points each:

[10m] Name this phrase, which refers to Republican efforts in the late 1960s to change existing voting patterns by appealing to the perceived racism of certain voting blocs.

ANSWER: **Southern strategy**

[10e] Though George Wallace ended up winning much of the South, this politician employed Kevin Philips during a successful 1968 Presidential campaign.

ANSWER: Richard (Milhous) **Nixon**

[10h] The Southern strategy dislodged the Byrd family, who engineered resistance to integration with a governor with this last name. A photographer with this first name captured a White man attacking a Black man with a flag at a busing protest.

ANSWER: **Stanley** [accept Thomas B(ah)nsen) **Stanley**; accept **Stanley** Foreman]

19. This woman's memoirs, published with an introduction by Ernest Hemingway, recounts her associations with artists like Chaïm Soutine ("hah-YEEM soo-TEEN") and Tsuguharu Foujita. For 10 points each:

[10m] Name this woman, who poses nude, with f-holes painted onto her back, in Man Ray's photograph *Le Violon d'Ingres* ("luh vee-yoh-LAWN DANG-gruh"). This iconic Surrealist model was nicknamed the "Queen of Montparnasse."

ANSWER: **Kiki** de Montparnasse ("mawn-par-NASS")

[10h] In another Man Ray photo, Kiki rests her head horizontally on a table, seemingly asleep, while holding upright one of these objects provided by George Sakier.

ANSWER: an African **mask** [prompt on African artifacts] (the photograph is *Noire et Blanche*)

[10e] A wire sculpture depicting Kiki de Montparnasse was created by this American-born artist, whose works include *Flamingo* and many kinetic sculptures known as "mobiles."

ANSWER: Alexander **Calder**

20. In one book, this thinker contrasted a pregnant woman needing a treatment to avoid a handicap in their child with a woman who can avoid the handicap by delaying her pregnancy. For 10 points:

[10h] Name this philosopher who argued that possible and actual people have the same ethical value in moral calculations, which he calls the "No-Difference View."

ANSWER: Derek **Parfit**

[10m] Parfit admits in *Reasons and Persons* that his No-Difference View inevitably leads to this problem, in which the existence of a massive population with low quality of life is better than a smaller one with much higher quality.

ANSWER: the **repugnant conclusion**

[10e] One argument against the repugnant conclusion contends that the phrase "better than" does not have this logical property, which states that if a relation holds for the pairs *a-and-b* and *b-and-c*, then it holds for *a-and-c*.

ANSWER: **transitivity** [accept word forms like **transitive**]