

## **(This) Tournament is a Crime**

Edited by Aauroni Gupta, Ike Jose, Eddie Kim, Bruce Lou, and Andrew Wang

Packet 12

Tossups

1. A group with this denticity is found on the chelex 100 resin used for ion exchange chromatography and extracting metal ions. The ligand IDA can bind up to this many sites, as can POCOP, a member of the cyclometallation cockblocking class of pincer ligands. This is the number of ligands found on complexes that racemize through the Ray-Dutt or Bailar twists. Octahedral complexes with less than or equal to this number of d electrons do not distinguish between high and low spin configurations because there are this many (\*)  $t_{2g}$  orbitals. Ligands with this denticity can bind either facially or meridionally. There are this many bridges between the "caps" of a cryptand. The presence of this many lone pairs results in triiodide's linear structure according to VSEPR ["vesper"] theory. For 10 points, name this number of oxygens in the nitrate and carbonate ions, whose geometries are trigonal planar.

ANSWER: **3**

<AW, Chemistry>

2. Sadie Plant's first book discusses this group's act of spreading a pamphlet called *The End of Music*, which criticizes punk music as being a "bowdlerized realization of" a certain 'poet's maxim' of 'Poetry made by all'. One of this group's leaders appeared in a 1973 film in which he read passages from his books over film footage of softcore porn and the works of Orson Welles and John Ford. This group consisted of former "Letterists," one of whom pioneered a "formulary for new urbanism" called (\*) psychogeography. That member of this group argued for the use of "*detournement*" to disrupt the relationship "mediated by a collection of images" in the book *The Society of the Spectacle*. The separation of art from politics and anti-capitalism were encouraged by, for 10 points, what group of avant-garde thinkers that included Raoul Vaneigem and Guy Debord?

ANSWER: **Situationist International** [accept word forms; accept **Situationists**]

<IJ, Thought>

3. An old man decides to save of two of these near-drowned people after having a portentous dream in which he had fought off a monkey trying to plunder a swallows' nest. One of these characters instructs a beautiful woman to walk through a hole in a partition wall between two houses, pretending to be her own twin sister Honoria. Mercury disguises himself as one of these people named Sosia to help Jupiter have sex with Alcmena, in the play *Amphitryon*. One of these characters takes advantage of an incomplete (\*) dowry paid by a Macedonian officer to secure Phoenicia for Simo's lovesick son Calidorus. An elaborate ruse planned by one of these people named Palaestus finally defeats the braggart soldier Pyrgopolynices, the title character of *Miles Gloriosus*. For 10 points, Pseudolus is an example of what type of stock character in Plautus's dramas, who usually outwits his master?

ANSWER: Plautine **slaves** [or **servants**]

<AG, Drama>

4. California Representative Henry Waxman introduced a bill probing into the causes of this event a year after it occurred. According to the report compiled by the Arthur D. Little consulting company, this event was caused by an act of sabotage perpetrated by a single person. A photograph taken by Pablo Bartholomew showcasing the consequences of this event shows a partially-buried glassy-eyed infant with only its face visible, with the rest of its body in soil. Using the pseudonym (\*) "Jude Finisterra," a member of the Yes Men, Andy Bichlbaum, went on BBC World to pull off a hoax taking full responsibility for this event. Victims of this event have demanded the extradition of Warren Anderson to the country where it occurred since it occurred to 2014, when Anderson passed away. About 4,000 people were killed in this event by toxic methyl isocyanate gas during this event, which was released when safety systems failed in a Union

Carbide plant in 1984. For 10 points, name this worst industrial disaster in history, a chemical leak in India's Madhya Pradesh province.

ANSWER: **Bhopal** disaster

<BL, World History>

5. A character in this novel warns against confusing businessmen, who buy at ten and sell at twelve, with mathematicians, who are paralyzed by the “beauty of numbers.” Patrick French’s biography of the author takes its title from this novel’s first line, which reads: “The world is what it is; men who are nothing, who allow themselves to become nothing, have no place in it.” A character in this novel honors his mother, who had been a hotel maid, by forming a Madonna cult around her. For sacrilegiously collecting religious masks, the Belgian priest Father (\*) Huismans is murdered in this novel’s first section. The protagonist of this novel beats his mistress Yvette, the wife of the European professor Raymond. In this novel, the commissioner Ferdinand repays the protagonist for helping him get an education by securing his release from prison and directing him aboard a steamer leaving the country. For 10 points, name this novel about Salim, a shopkeeper in an African country run by the “Big Man,” written by V.S. Naipaul.

ANSWER: *A Bend in the River*

<AG, Long Fiction>

6. During the first millennium, these physical objects were written using symbols such as the punctum, the clivis, and the porrectus. In the 1300s, they were prefaced by either a circle or a semicircle to indicate perfection, sometimes with a dot in the centre. Sections of these objects were written in red ink during a short-lived “subtilior” style in the 14th century. The neumes [rhymes with “fumes”] used to create these documents were made obsolete by the monk (\*) Guido of Arezzo. Open-source software such as LilyPond can be used to make high-quality reproductions of these documents for copying and publication, a process called engraving. The oldest publisher of these documents is Breitkopf & Härtel. These documents are collected on the website IMSLP, and most professionals produce them using programs such as Sibelius and Finale. For 10 points, identify these documents on which music is written.

ANSWER: music **scores** [or **sheet music**; or **written music**; or obvious equivalents; prompt on music]

<EK, Music/Opera>

*Note: Original-language term required.*

7. An ethnic group in the Hindu Kush described by this term is classified into black-robed and red-robed branches. This term originally described farmers who buried their seeds in the ground. The 109th Sura is addressed to a group of these people. There are usually eight or ten listed motivations for people described by this term, including stubbornness, rejection, denial, and hypocrisy. *Mushrik* is often used interchangeably with this term in the Qu’ran. Mu’tazilite jurists preferred to use an intermediate term between this one and its opposite, *mu’mīn*, for people who commit (\*) grave sins and died before repenting. *Takfir* is the act of accusing a Muslim of being this type of person, whose name derives from a Semitic root meaning “to cover.” Muhammad addressed these people with the oft quoted line “To you your religion, and to me mine.” For 10 points, name this Arabic-language term for unbelievers, which has been co-opted into a derogatory racial term for black Africans.

ANSWER: **kafir** [or **kaffirun**; or **kuffar**; or **kafirah**; or **kufir**; or **mushrik** before it is mentioned]

<AG, Religion>

8. In the town of Mod-jad-jisk-loof, you can throw darts at the Sunland bar, which is inside one of these objects. A giant one of these things known as Kon-da-nam-wali, supposedly “ate” four maidens out of jealousy and can be found in Kafue National Park. A group of these objects, including thousand-year old ones named for Alfred Grandidier, can be found along a namesake “avenue” in the Menabe region. The now-extinct (\*) elephant bird and fork-marked lemur disperse the seeds of these members of genus *Adansonia* on an island often called the 8th Continent of the World. Seven distinct species of these plants can be found on an island separated from Africa by the Strait of Mozambique. For 10 points, name these prehistoric trees found on Madagascar, known for their distinct swollen trunks.

ANSWER: **baobab** tree [prompt on trees]

<IJ, Geography/Current Events/Other>

9. **The first and third isoforms of an enzyme that inactivates this complex are abundant in the heart and testes, respectively. An enzyme in this complex is arranged as twenty four subunits forming a cubic core in prokaryotes, and sixty subunits forming a dodecahedral core in eukaryotes. Most people with primary biliary cirrhosis have autoantibodies to this complex, which catalyzes a reaction called the Swanson conversion. The last enzyme in this complex, which also appears in similar complexes acting upon branched chain amino acids and alpha-ketoglutarate, produces a molecule apiece of (\*) FAD and NADH. In its rate limiting step, the second carbon on the zwitterionic thiazolium ring of the TPP cofactor performs a nucleophilic attack, releasing a CO<sub>2</sub>. The E2 enzyme in this complex catalyzes the transfer of an acetyl group from a “swinging arm” of lipoate to the thiol group, forming the final product. For 10 points, name this enzyme complex that converts the end product of glycolysis into acetyl-CoA.**

ANSWER: **pyruvate dehydrogenase** complex [or **PDC**; do not accept or prompt on “pyruvate decarboxylase”]

<AG, Biology>

*Note: Descriptive answers acceptable.*

10. **This action was almost prevented with a large bribe of 30,000 pieces of silver, but the bribe was thwarted when a prior rushed in with a crucifix and yelled “Judas Iscariot sold his master for thirty pieces of silver. Your Highness would sell him anew for thirty thousand.” Sultan Bayezid II allowed the Ottoman Empire to offer asylum to victims of this action, of which he said “impoverished [their] land and enriched ours.” One of the most rabid proponents of taking this action was (\*) Francisco Jimenez de Cisneros, who almost immediately took this action after becoming the queen’s personal confessor. This action led to the diaspora of the hybrid language Ladino across the Mediterranean. People targeted by this action, collectively known as Sephardi, were forced to leave the country, become *conversos*, or risk execution. For 10 points, name this 1492 action demanded by the Alhambra Decree issued by Ferdinand and Isabella, which eliminated an entire religious group from post-Reconquista Spain.**

ANSWER: **expulsion** of the **Jews** from Spain [accept **Alhambra** Decree before read]

<BL, European History>

11. **The Nilsson model of these structures accounts for deformations which can result in shapes resembling pears, peanuts, and the theoretically possible “banana”. Low energy states in these structures are called yrast states. These entities cannot undergo isoscalar dipole vibrations because it shifts their center of mass, so the lowest vibrational mode they experience is quadrupolar. A denominator of 1 plus various deformation parameters obtained from the spherical harmonics is found in a formula for the (\*) charge density of this structure obtained from the Woods-Saxon potential. The coulomb term and asymmetry term appear in a semi-empirical formula for their mass, which is obtained by treating them as a liquid drop. These entities can be described as even-even or odd-odd depending on the number of their constituents. It is believed there will be an “island of stability” for a set of these entities whose compositions are near a magic number whose values include 2, 20, and 126. For 10 points, name this atomic structure formed of protons and neutrons.**

ANSWER: atomic **nucleus** [or atomic **nuclei**]

<AW, Physics>

12. **An author with this surname wrote a poem praising a boy who holds his head “High sort of and a bit to one side / Like a prince, a jazz prince.” A poet with this surname wrote of an object that “tries to forget it has dreamed with the stars / While it breaks, breaks, breaks on the sheltering bars,” in her poem that begins “The heart of a woman goes forth with the dawn.” The black female poets Helene and Georgia Douglas shared this surname with the author of a poem whose speaker declares “I’m lonely - / I’ll make me a world.” A weary old woman in Savannah named (\*) Sister Caroline is brought to heaven in “Go Down, Death,” which an author with this surname included alongside “The Prodigal Son” and “The Creation” among his “seven sermons in Negro verse.” For 10 points, give the surname of the Harlem Renaissance poet of *God’s Trombones* and the “black national anthem” “Lift Ev’ry Voice and Sing,” James Weldon.**

ANSWER: **Johnson** [or Helene **Johnson**; accept Georgia Douglas **Johnson**; or James Weldon **Johnson**]  
<AG, Poetry>

13. **This artist used combinations of a fish, a water pitcher, a skull, a cross, and a rosary in a series of *Vanitas* paintings, the first of which depicts a half-purple half-brown skull. Pierre Reverdy compiled the aphorisms this artist was fond of scribbling on his drawings, and published them as “Thoughts and Reflections on Painting.” Late in his career, this artist created a series of paintings of his studio, each depicting a large bird in various stages of flight. This artist drew pears, grapes, and the words “ALE” and “BAR” in charcoal over three strips of wallpaper he attached to the canvas in his painting (\*) *Fruit Dish and Glass*, the first *papier collé*. This painter included objects like pipes, palettes, and candlesticks in a series of abstract representations of violins. He’s not Matisse, but Louis Vauxcelles coined the name for a movement when he mocked the strict geometric composition of this artist’s landscape *Houses at l’Estaque*. For 10 points, name this French painter who co-founded Cubism with Picasso.**

ANSWER: Georges **Braque**  
<AG, Painting>

14. **A book arguing that societies undergo this process proposes the formula “P equals E times T” to calculate their energy usage. That book by Leslie White argues that this process affects technology, ideology, and sociology, and inspired a 1960 Marshall Sahlins book that divided this process into “general” and “specific” types. Michael Tomasello used a “ratchet effect” argument how this process proceeds via “jumps” caused by inventions. In *The Rise of Anthropological Theory*, Marvin Harris argues that Historical (\*) Particularism was a reaction to the idea that a “unilineal” form of this process shaped western culture. The book *System of Synthetic Philosophy* argues that a form of this process should be applied to people within society. For 10 points, name this process, whose “biological” form was initially described in *The Origin of Species* by Charles Darwin.**

ANSWER: **evolution** [accept cultural **evolution** or neo-**evolution**]  
<IJ, Social Science>

15. **The speaker of this oration recalled visiting three paper mill workers who “don’t read Adam Smith or Edmund Burke” in “a tiny town in Southern Georgia called Fitzgerald” who were under threat of losing their jobs in an anecdote in this speech. Molly Ivins sarcastically wrote that this speech “probably would have sounded better in the original German.” This speech called a rival event (\*) “a giant masquerade ball” and “the single greatest exhibition of cross-dressing in American political history.” A list of left-wing reforms—“abortion on demand, a litmus test for the Supreme Court, homosexual rights, discrimination against religious schools, women in combat units”—are listed as things the speaker did not want “in a nation we still call God’s country.” This speech claimed that “Clinton and Clinton are on the other side, and George Bush is on our side” of a “war for the soul of America.” For 10 points, name this speech given at the 1992 Republican National Convention by Pat Buchanan.**

ANSWER: “**culture war**” speech [or Pat **Buchanan**’s speech at the **1992 Republican National Convention**; accept RNC in lieu of Republican National Convention]  
<BL, American History>

16. **In the *Prose Edda*, the ship of Mysing sinks when an enormous amount of this substance is produced by the maidservants Fenja and Menja. A valley named for this substance is where eighteen thousand Edomites are slain by David in the Bible. Paracelsus represented this material using a circle with a horizontal line through its diameter, and grouped it with mercury and sulfur as one of the tria prima. In Roman mythology, Neptune’s wife is named for this substance. This material is infused into the block of (\*) ice licked by the cow Audhumla. This material must be thrown behind one’s left shoulder to ward off evil if a container of it is knocked over, as Judas Iscariot does in da Vinci’s *The Last Supper*. It is often stated that Scipio Africanus sowed this substance into the soil of the destroyed city of Carthage. For 10 points, identify this substance into which Lot’s wife is transformed as she flees the city of Sodom.**

ANSWER: **salt**

<EK, Legends>

17. These constructs are divided into two types in Ousterhout's Dichotomy, which classifies the "smaller" easier-to-use type of them as "glue." Nwankwogu Sopuruchi classified these things into five generations, with the first-generation type of them being the least portable and the fifth-generation type of them often being used for tasks such as knowledge representation. Mathematical proofs may be expressed using these constructs and have their correctness verified by them according to the Curry- (\*) Howard isomorphism. The first non-Von Neumann one of these, Plankalkul, was developed by Konrad Zuse for the Z3. Many of these constructs are Turing-Complete, even shit-for-brains ones like Shakespeare and Brainfuck. Pseudocode is an informal description of an algorithm structured according to the rules of these constructs. For 10 points, name these constructs, such as Clojure, Python, and SQL.

ANSWER: programming languages [accept formal languages; accept computer programs; prompt on operational semantics; prompt on languages]

<IJ, Computer Science>

18. A character in this story suppresses the urge to say "rats" in disbelief while hearing a man's ridiculous claims, but eventually caves and exclaims: "beyond-rats!" This story is set during "that indefinite season when partridges are still in security or cold storage, and there is nothing to hunt." A car in this story is nicknamed "The Envy of Sisyphus," because "it goes quite nicely up-hill if you push it." A character in this story is more crestfallen than "an archangel ecstatically proclaiming the new Millennium, and then finding that it... would have to be indefinitely postponed," when Sir (\*) Wilfred suggests putting strychnine in the title character's scraps and then drowning him. Lady Blemley writes a nasty letter to the rectory after its "big yellow tom" claws and bites this story's title animal to death. A character in this story is killed at the Dresden Zoological Garden by an elephant he was trying to teach German irregular verbs. For 10 points, Cornelius Appin teaches a cat how to talk in what story by Saki?

ANSWER: "Tobermory"

<AG, Short Fiction>

19. In 1869, this man crossed the Atlantic from Europe to Indianapolis for the sole purpose of getting a divorce from his first wife, which was mocked as "a copper-bottom divorce" by the *Terre Haute Weekly Gazette*. This man only allowed his younger son to be baptized if it was by his own hand, which he did while holding a copy of the *Iliad* above his son's head and reciting a hundred lines from it. This man's excavations of a (\*) *tholoi*, or beehive tomb, at Orchomenus yielded a massive lintel made of several tons of granite. One of this man's most famous discoveries was a golden burial mask belonging to a Mycenaean king, which this archaeologist presumed was Agamemnon. At the Anatolian site of Hisarlik, this man uncovered an abundance of ancient artifacts known today as Priam's Treasure. For 10 points, name this archaeologist who uncovered the remains what he was presumed to be the site of ancient Troy.

ANSWER: Heinrich Schliemann

<BL, Other History>

20. Musicians in this country keep rhythm by indicating downbeats with hand claps, and upbeats with either a tap of a finger against the palm of the same hand, or with a clap of the back of one hand against the palm of the other. The seven notes S, R, G, M, P, D, and N form traditional musical scales of this country, whose unofficial national anthem has a title that means "I bow to thee, Mother." This country's improvisational music uses one of many musical modes associated with a specific time of day and emotion. This is the most populous country in which the (\*) harmonium is a household instrument used to play drone music. A plucked string instrument from this country has a resonating gourd behind the fingerboard, and has a long neck with between eighteen and twenty-one tuning pegs, one for each string. The *tabla* drum is used to keep rhythm in this country, where rhythmic units called *tala* are played according to melodic structures called *raga*. For 10 points, name this country home to the *sitar*.

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

<EK, Other Art>

## Bonuses

1. This book's "nonstraightforward" introduction presents a "gentle manifesto" stating that Godel's incompleteness theorem and T.S. Eliot's analysis of "difficult" poetry are its precedents. For 10 points each:

[10] Name this work which analyzes the "double-functioning" and "both-and" elements of buildings as examples of the title concepts. It contains its author's dictum that "less is a bore."

ANSWER: **Complexity and Contradiction in Architecture**

[10] In the book, Robert Venturi praises this architect's Wiley House for attempting to get beyond the simplicities of "the elegant pavilion," but bemoans the "bland architecture" of his Glass House.

ANSWER: Philip **Johnson**

[10] Venturi notes that the "best twentieth-century architects" usually reject simplification, praising this man for combining "standardization with irrationality" for his Cultural Center in Woburn. He also created the Baker House for MIT.

ANSWER: Alvar **Aalto**

<IJ, Other Art>

2. For 10 points each, answer the following about the Roman grammarian and philosopher Censorinus, whose only surviving work, *On the Day of Birth*, collects anecdotes about auspicious pregnancies:

[10] The book argues that the spacing of seven of these objects explains why it is more advantageous for men to be born in certain months. The ancient *musica universalis* doctrine holds that these things are a manifestation of pure music.

ANSWER: **planets** [or the **spheres**; prompt on **stars**]

[10] Censorinus attributes his belief of planets having an impact on birth to this ancient philosopher, who names a famous theorem in mathematics. This philosopher espoused vegetarianism and a belief in metempsychosis.

ANSWER: **Pythagoras**

[10] Censorinus's account of the *hebdomades*, or "weeks of man's life", cites the work of Staseas, a member from this school of thought in ancient philosophy. Strato of Lampascus was a member of this group and its third scholarch.

ANSWER: **Peripatetic** School [prompt on **Lyceum**]

<IJ, Thought>

3. "Les plaisirs" and "Air à l'Italien" are two movements of this composer's A minor suite for flute and strings. For 10 points each:

[10] Name this Baroque composer whose characteristic blend of Italian melody, German counterpoint, and French ornamentation is seen in a set of six pieces for flute, violin, cello, and continuo.

ANSWER: Georg Philipp **Telemann**

[10] Corelli's concertos were used as a model by both Telemann and Vivaldi. This F minor Vivaldi violin concerto opens with eleven bars of staccato chords that slowly crescendo into the soloist's entrance.

ANSWER: **Winter** [or **L'inverno**; prompt on **The Four Seasons**; prompt on **Le quattro stagioni**; prompt on **The Contest Between Harmony and Invention**; prompt on **Il cimento dell'armonia e dell'invenzione**]

[10] Written for a German margrave, this set of six concerti grossi by J.S. Bach is scored for varying concertino instruments such as flutes, violins, recorders, trumpets, and horns.

ANSWER: **Brandenburg Concertos** [or **Six Concerts à plusieurs instruments**]

<EK, Music/Opera>

4. Unlike the rounded profile of laminar flow through a column, flow via this process has a nearly flat profile. For 10 points each:

[10] Name this sort of motion that occurs in microchannels with an applied electric field, effectively due to the dragging of part of the electric double-layer.

ANSWER: **electroosmosis**

[10] Electroosmosis is the basis of electrophoresis which takes place in one of these items. Melting point can be determined by packing a sample into one of these items and observing when the crystal melts.

ANSWER: **capillary** tube [prompt on glass **tube**]

[10] To increase signal at the detectors, capillaries sometimes contain a bubble cell to increase path length, which thus increases absorbance according to this law which states that absorbance equals the extinction coefficient times path length times concentration.

ANSWER: **Beer's** law [or **Beer-Lambert** law]

<AW, Chemistry>

5. For 10 points each, name some members of Richard Nixon's cabinet.

[10] Nixon kept this controversial fan of *realpolitik* as his National Security Advisor and later Secretary of State as one of his closest advisors. He secretly negotiated Nixon's visit to China and was co-awarded the Nobel Peace Prize with Le Duc Tho for the Paris Peace Accords.

ANSWER: Henry **Kissinger**

[10] This Texas politician and Secretary of the Treasury removed the United States from the gold standard, leading to what became known as the Nixon Shock. He later failed to gain the Republican nomination in the Election of 1980.

ANSWER: John **Connally**

[10] Nixon's most embarrassing cabinet member was undoubtedly this Secretary of Agriculture, who was forced to resign after making a joke about interspecies sex followed by the shockingly racist statement: "I'll tell you what the coloreds want. It's three things: first, a tight "redacted" ; second, loose shoes; and third, a warm place to shit."

ANSWER: Earl **Butz**

<BL, American History>

6. The man who formulated this construct wrote a couplet that states "Each to each a [this construct] / reflects the other that doth pass" to explain how it works. For 10 points each:

[10] Name this concept introduced in the book *Human Nature and the Social Order*, which holds that a person's concept of their own identity is largely based on the perception of other people.

ANSWER: **looking glass self**

[10] Charles Cooley, the formulator of the looking glass self, was a member of this school of sociologists, whose other members include Albion Small. The first department of sociology in the U.S. was founded at this place.

ANSWER: University of **Chicago**

[10] Cooley used this psychologist's research on identity to formulate his concept of the looking glass self. This author's books include *Principles of Psychology*, which introduced the idea that consciousness works akin to a stream.

ANSWER: William **James**

<IJ, Social Science>

7. The speaker of the twenty-third poem in this sequence laments that "for all that I in many days do weave, / In one short hour I find by her undone," declaring that his lover is the Penelope to his Ulysses. For 10 points each:

[10] Name this cycle of eighty-nine Petrarchan sonnets, the first of which begins: "Happy ye leaves when as those lily hands." It celebrates the love between the poet and his second wife, Elizabeth Boyle.

ANSWER: **Amoretti**

[10] This author of *Amoretti* allegorized another Elizabeth, the queen, as the mythical Gloriana in his epic poem *The Faerie Queene*.

ANSWER: Edmund **Spenser**

[10] Sonnet 15 of *Amoretti*, in which the speaker compares his mistress's lips, teeth, and forehead to rubies, pearls, and ivory, is this type of poem praising individual parts of a woman's body. Shakespeare's sonnet "My mistress' eyes are nothing like the sun" is another example.

ANSWER: **blazon**

<AG, Poetry>

8. The combinatorial version of this theorem, which was first proved by Alon and Tarsi, gives bounds for the cardinalities of restricted sumsets. For 10 points each:

[10] Name this theorem which states that maximal ideals of a polynomial ring comprised of " $T_1$  to  $T_n$ " are of the form " $T_1 - a_1$ , to  $T_n - a_n$ ," where " $a_1$  through  $a_n$ " are complex numbers.

ANSWER: **Nullstellensatz** Theorem [prompt on **Zeros Theorem**]

[10] The Nullstellensatz Theorem is a key result in the "algebraic" form of this branch of mathematics. In many non-Euclidean forms of this discipline, angles of triangles sum to values different than 180 degrees.

ANSWER: **geometry**

[10] This mathematician formulated and proved the Nullstellensatz theorem. Another theorem named for him states that a polynomial ring over a Noetherian ring is itself Noetherian.

ANSWER: David **Hilbert**

<IJ, Math/Other Science>

9. A medal commemorating this battle depicts the fully naked commander of the victors of it slaying a bear representing Russia with a sword. For 10 points each:

[10] Name this 1914 disaster for the Russian Army on the Eastern Front. It was actually fought near Allenstein, but was renamed to avenge a 1410 defeat for the Teutonic Knights.

ANSWER: (Second) Battle of **Tannenberg** [do not accept or prompt on First Battle of Tannenberg, since that refers to the Battle of Grunwald]

[10] After the Battle of Tannenberg, Germany set up a military occupation zone in a massive swath of seized territory called *Ober Ost*, which was jointly ruled with an iron fist by two people: this commander and this Chief of Staff of all German forces on the Eastern Front. Name both.

ANSWER: Paul von **Hindenburg** and Erich **Ludendorff**

[10] This University of Tennessee professor's book *War Land on the Eastern Front* argues that Nazi brutality on the Eastern Front in World War II directly stemmed from German disgust at "primitive" people inhabiting *Ober Ost*.

ANSWER: Vejas Gabriel **Liulevicius** (pronounced LEW-LE-VI-CHUS)

<BL, European History>

10. For 10 points each, answer the following about the destruction of certain objects.

[10] A namesake type of lice of genus *Psocoptera*, as well as silverfish bugs, can damage the starchy interiors of these objects. The glue that comprises these objects is consumed by firebrats.

ANSWER: **books**

[10] When Tarquin the Proud refused to purchase these books from a namesake female oracle, she burned six of them. All nine of these supposedly recorded the future of Rome.

ANSWER: **Sibylline** Books [or **Sibylline Prophecies**]

[10] In this author's story "Earth's Holocaust," a society burns away all things it finds offensive, including its books. Other stories by him include "The New Adam and Eve."

ANSWER: Nathaniel **Hawthorne**

<IJ, Geography/Current Events/Other>

11. These people defeated Henry II the Pious of Poland and Bela IV of Hungary in battles occurring on two consecutive days, more than 500 miles apart. For 10 points each:

[10] Name this group whose conquest of Eastern Europe seemed all but inevitable if not for the untimely death of Ogedei, which caused them to retreat.

ANSWER: **Mongols**

[10] This "dog of war," along with Batu Khan, devastated Hungarian forces at the Battle of Mohi as the master strategist of the Mongol army under Genghis Khan and Ogedei Khan.

ANSWER: **Subotai**

[10] Subotai used this specific tactic to trick Hungarian knights into falling into a marshy death-trap at the Battle of Mohi, where they were all but slaughtered by the thousands.

ANSWER: he **faked** a **hole** in his lines [accept **faking a gap** in his lines; accept **pretending** to have a **weakness** in his lines; accept **faking** an **escape route** for the enemy; accept equivalents for "fake" and "gap"]

<BL, World History>



12. This writer drew on the findings of the psychoanalyst William Niederland to argue that the "acute of fear of death" made Jean Amery's writing style ironic, so as to avoid "pity and self-pity," in his essay "Against the Irreversible." For 10 points each:

[10] Name this author who discussed the evasion of the past facilitated by before-and-after photographs, such as ones showing Frankfurt in 1947 and 1997, in his essay "Air War and Literature," collected in the volume *On the Natural History of Destruction*.

ANSWER: W.G. **Sebald** [or Winfried Georg **Sebald**]

[10] In *On the Natural History of Destruction*, Sebald discusses the "inner emigration" of Germans who claimed to reject this event's ideological underpinnings, but did not leave the country because of it. Primo Levi's *If This is a Man* and Elie Wiesel's *Night* are accounts of survival during it.

ANSWER: the **Holocaust**

[10] This writer memorialized the diary of Hiroshima survivor Michihiko Hachiya in his similar collection *The Conscience of Words & Ear Witness*. Twenty-two years after fleeing Austria in the wake of the Anschluss, this writer examined how masses of people follow rulers in *Crowds and Power*.

ANSWER: Elias **Canetti**

<IJ/AG, Short Fiction/Miscellaneous>

13. Answer the following about Chinese religious symbols, for 10 points each.

[10] The *taijitu*, a symbol consisting of a circle divided into light and dark, with smaller circles of the opposite shade in each half, represents this cosmic duality.

ANSWER: **yin** and **yang**

[10] Four *taijitu* in black, red, and blue surround a large yellow swastika on this symbol, which translates to "law wheel."

ANSWER: **falun** [of Falun Gong fame]

[10] The culture hero Fu Xi surrounded the *taijitu* with eight sets of trigrams, with each line either broken or unbroken in accordance with *yin* and *yang* respectively, to create this symbol.

ANSWER: **Ba Gua** [or **Pa Kua**]

<AG, Religion>

14. Frequency combs can be produced by using this technique. For 10 points each:

[10] Name this technique of configuring phases such that interference produces ultra-short and equally spaced laser pulses.

ANSWER: **mode-locking**

[10] One form of mode-locking relies on the Kerr effect, in which this quantity for a material changes in response to an electric field. This quantity is the ratio of the vacuum speed of light to the speed of light in the medium.

ANSWER: **index of refraction** [or **refractive index**]

[10] A method to amplify ultrashort laser pulses called CPA results in the pulses becoming one of these pulses whose frequency increases with time. Prism compressors are used to shorten the duration of those pulses of this type.

ANSWER: up-**chirp**

<AW, Physics>

15. Immediately before this implied event, a character brushes his teeth, borrows his roommate Shreve's clothes brush to clean his hat, and places his broken, yet still ticking watch in Shreve's drawer. For 10 points each:

[10] Name this event, which is implied to happen after the end of the section "June Second, 1910." A bridge over the Charles River contains a plaque commemorating this literary event.

ANSWER: the **suicide of Quentin** Compson [or **Quentin's death** by drowning]

[10] Quentin Compson kills himself to preserve his notion of Southern honor in the face of the promiscuity of his sister Caddy, in this novel by William Faulkner.

ANSWER: *The Sound and the Fury*

[10] After buying bread for a poor girl of this ethnicity, Quentin experiences an involuntary memory of his first encounter with a girl, whom Caddy had called dirty. Quentin is arrested for kidnapping the girl of this ethnicity, who follows him around Cambridge.

ANSWER: **Italian**

<AG, Long Fiction>

16. Enraged by one of this man's declarations, revolutionaries stormed the Tuileries Palace on August 10, 1792 and imprisoned Louis XVI and Marie Antoinette. For 10 points each:

[10] Name this Prussian general whose namesake proclamation threatened to put Parisian civilians to the sword if Louis XVI was harmed. His army never reached Paris as he was defeated at the Battle of Valmy.

ANSWER: Charles William Ferdinand, Duke of **Brunswick**-Wolfenbuttel [accept **Brunswick** Proclamation or **Brunswick** Manifesto]

[10] The turning point of the Battle of Valmy came when this commander inspired his inexperienced but zealous troops with a cry of "Vive la nation!" which eventually led to his decoration as the Duc de Valmy. His son of the same name led a cavalry charge that turned the tide of the Battle of Marengo.

ANSWER: Francois Christophe **Kellermann**, 1st duc de Valmy

[10] This writer described Kellermann's charge with the words "a new epoch in the history of the world has begun." This writer contributed such German classics as *Faust* and *The Sorrows of Young Werther*.

ANSWER: Johann Wolfgang von **Goethe**

<BL, European History>

17. A character who moves to this city after serving as a bombardier in the Air Force during the Second World War drowns during a vacation in Florida, a death his father suspects of being suicide. For 10 points each:

[10] Name this American city, the setting of *The Last Night of Ballyhoo* and *Parade*, two entries in a trilogy focusing on its Jewish community.

ANSWER: **Atlanta**

[10] In this first play from Alfred Uhry's Atlanta trilogy, an old Jewish lady softens her racist attitudes over the twenty-five years that she hires the black man Hoke Coleburn to perform the title action.

ANSWER: **Driving Miss Daisy**

[10] *The Last Night of Ballyhoo* is set during the 1939 premiere of the film adaptation of this novel, a massive event in Atlanta history. Horton Foote, the author of *The Young Man from Atlanta*, adapted a Japanese screenplay based on this novel for a musical titled for its character Scarlett O'Hara.

ANSWER: **Gone With the Wind**

<AG, Drama>

18. This artwork's unusual depiction of The Last Supper features Judas at the center instead of Jesus Christ. For 10 points each:

[10] Name this wooden artwork whose one of whose wings depict Christ's Entry into Jerusalem. This altarpiece in the church of Saint James in Rothenberg is named for what's contained in the vial at its center.

ANSWER: **Holy Blood** Altarpiece [do not accept or prompt on partial answers]

[10] A wing of Tilman Riemenschneider's *Holy Blood Altarpiece* depicts this scene. Giovanni Bellini's unusual version of this scene includes a staircase over a river and depicts Jesus in prayer on the Mount of Olives.

ANSWER: **Agony in the Garden**

[10] The windows of the Saint James church contain depictions of the life of this figure. The archangel Gabriel tells this woman that she is pregnant in many *Annunciation* scenes.

ANSWER: The **Virgin** [or **Mary**; or **Madonna**]

<IJ, Painting/Sculpture>

19. When she refuses to come to this event, the nymph Chelone is transformed into a tortoise. For 10 points each:

[10] Identify this event, the first of its kind to take place on Mount Olympus. Gaia presents the golden apples of the Hesperides during this event.

ANSWER: the **wedding of Zeus and Hera** [or obvious equivalents]

[10] As an infant, this child of Zeus and Hera is thrown off of Mount Olympus due to his crippled leg.

ANSWER: **Hephaestus**

[10] Each year, Hera travels to a magic spring named Kanathos and takes a bath in order to perform this symbolic action.

ANSWER: she **renews her virginity**

<EK, Legends>

20. It's hard to pin down unique features of signaling pathways, so identify some things common to them, for 10 points each.

[10] Many signal transduction cascades are triggered by the release of secondary messengers, such as this derivative of ATP that activates protein kinase A.

ANSWER: **cAMP** [or **cyclic AMP**]

[10] A huge reason that there's so little that's distinctive about any given pathway is that they share components and affect one another, a phenomenon given this name. For instance, cAMP can activate ERK, part of the MAP kinase pathway.

ANSWER: **cross-talk**

[10] These proteins tether multiple components of a signaling pathway at once, localizing them to specific areas and insulating them from competing proteins. Ste5 acts as a protein of this type in the MAP kinase pathway.

ANSWER: **scaffolding** protein

<AG. Biology>