

(This) Tournament is a Crime

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

Packet 9

Tossups

Note: Two answers required.

1. **Noting the black garments of officials and emissaries, people from one of these empires became known as “those with the black robes” to the other. A shipwreck off the island of Belitung containing luxury goods from one of these empires bound for the other is the most complete evidence for maritime trade between them. In order to control its western frontier, one of these empires established the Protectorate General to Pacify the West, which came into conflict with the other empire’s eastward expansion. The (*) Tibetan Empire engaged in near-constant warfare with one of these empires, while the other allied with Tibet or with the first empire in a constant reversal of alliances. The first non-Chinese paper mill in the world sprung up in Samargand after prisoners of war from one of these empires leaked the secret of papermaking to the other. In 750 AD, the capitals of these two empires were the two most populous cities in the world. For 10 points, name these medieval superpowers whose territorial ambitions over Central Asia clashed at the Battle of the Talas River.**

ANSWER: **Tang** Dynasty and the **Abbasid** Caliphate
<BL, World History>

2. **Sevast'yanov showed that an approximate answer of "1.2 times the square root of c over 2k plus one" resolves the "almost" variant of this problem. Schemes named after this problem work by storing values and their associated inverse images, and then checking to see if any of the stored values are the same; such schemes become impractical when n, or the number of stored values, is greater than 160, though those schemes named after this problem are still used to (*) brute-force cryptographic hashes. The generalized form of this problem was modeled using multinomial theory by Levin. In Martin Gardner's original formulation of this problem, for n = 30, the solution to this problem is approximately 70%. By the pigeonhole principle, the solution to this problem is 100% when n = 366 or more. For 10 points, name this problem from combinatorics that asks for the probability that at least 2 people in a group are born during the same day.**

ANSWER: **birthday** paradox or problem
<IJ, Math/Other Science>

3. **A character in this novel recounts meeting a Chinese man during his travels, who tossed three pills into water that transformed into a ship, a house, and a flower, and produces his claspknife to mimic an Italian being stabbed in the back. This novel details the furnishings, location, and cost of its protagonist's ideal suburban bungalow, right after taking up nearly a page itemizing his budget. In this novel's last chapter, a train whistle obscures the sound of a woman shifting in bed and (*) farting. A character in this novel remembers putting “the rose in my hair like the Andalusian girls” on the blissful day in Howth when her fiance had proposed to her. This novel's final three sections, collectively known as the “Nostos,” are an account of a meal at a cabman's shelter, a set of 309 questions and answers in the style of a catechism, and an eight-sentence, twenty-two page long soliloquy that ends “yes I said yes I will Yes.” For 10 points, name this novel that ends with Molly and Leopold Bloom reunited at home, by James Joyce.**

ANSWER: **Ulysses**
<AG, Long Fiction>

4. **Until the 20th century, this was the more southern of two regions that produced an alcoholic beverage that was fermented using only the saliva of two virgins in one cup. This region is home to a dish in which pork and its skin is dipped into a molasses and soy sauce - that dish is *rafute* [rah-foo-tee] A soup noodle dish from this region is often served with pork ribs that have their cartilage attached, known as *soki*. This region's cultural arts include a “grappling hands” contest called *kihon*. This region's cuisine has Chinese influences since it paid tribute to the Ming during the (*) Sanzan Period. "Taco Rice" became a**

specialty dish of this region after a restaurant named Charlie's Tacos opened here in the 1940s. The martial art of karate was developed in this region, which was once the largest part of the Ryukyu kingdom. For 10 points, name this southern Japanese island, whose distinct cuisine is vastly different from mainland Japan.

ANSWER: Okinawa [prompt on Japan; accept Ryukyu islands until "Ryukyu"]

<IJ, Geography/Current Events/Other>

5. In a symphony by this composer, the second movement is a 4/8 time double fugue whose subject is introduced by an unaccompanied solo oboe. One of his ballets is scored for four vocal soloists, chorus, four pianos, and percussion. This composer created an operatic soprano who resolves to travel to London to find her fiancé in an aria titled "No word from" the title character. In one of his symphonies, a chorus enters for the first time on the words "exaudi orationem meam." He wrote an opera whose protagonist marries Baba the Turk instead of Anne Trulove after being deceived by (*) Nick Shadow. This composer wrote the ballet *Les noces*, the opera *The Rake's Progress*, and the *Symphony of Psalms* during his Neoclassical period. Flute trills dominate the "Spring Rounds" section of "The Adoration of the Earth" in another of his ballets. A "Sacrificial Dance" depicts a young woman dancing herself to death in that riot-inducing 1913 ballet by this composer. For 10 points, name this composer of *The Rite of Spring*.

ANSWER: Igor Stravinsky [or Igor Fyodorovich Stravinsky]

<EK, Music/Opera>

6. A University of North Carolina study by David Williamson performed 15 years after this event found that its negative effects lingered far longer than was expected. In one of his last bombings, Ted Kaczynski targeted Young & Rubicam executive Thomas Mosser for his role in "manipulating people's attitudes" about this event. Investigative journalist Gregory Palast claimed that this event was caused by the shortcomings of the RAYCAS radar system. Seven fish-processing companies based in (*) Seattle filed a lawsuit in the aftermath of this event and were awarded a secret settlement totalling around 70 million dollars. Knight Island was heavily damaged by this event, which was caused by a vessel carrying cargo from Prudhoe Bay. Joseph Hazelwood was reportedly drunk when his ship struck Bligh Reef in Prince William Sound, triggering this event, which was only surpassed in volume by 2010's *Deepwater Horizon* disaster. For 10 points, name this 1989 environmental disaster caused by an oil tanker running aground off Alaska.

ANSWER: Exxon Valdez oil spill

<BL, American History>

7. Francois Mauriac once claimed that a student of Ambroise Gardeil was the "sacred monster" of this philosopher's ideas since Gardeil's student used this man's thought to attack Bergsonian vitalism in books such as *God: His Existence and His Nature*. Reginald Garrigou-Lagrange led the "strict observance" school of thought named for this man, and synthesized the patristic ideas in this philosopher's magnum opus with the visions of John of the Cross. This philosopher's works, which are often cited using (*) the Leonine Edition, includes a book that refrains from citing the Old or New Testament since it was intended as a treatise for missionaries to help convince members of the title group of the value of God. This philosopher's longest work is written in a question and answer format in which answers are presented with the response "sed contra," or "on the contrary." A *Summation Against the Gentiles* was written by, for 10 points, what Catholic philosopher who gave five proofs for the existence of God in *Summa Theologica*?

ANSWER: Thomas Aquinas

<IJ, Thought>

8. One method of finding this quantity is by applying an RF pulse, then measuring the resulting image current and taking its Fourier transform. An Alexander Makarov designed device produces an FID whose Fourier transform displays the distribution of this quantity. Although not directly measured, the resolution of this quantity is increased when using the reflectron configuration. The Thomson is a proposed unit for this quantity in spite of IUPAC's deprecation of it. Magnetic field strength divided by this quantity is equal to the (*) cyclotron frequency, which is the premise of FT-ICR. The Nier-Johnson and Mauttach-Herzog configurations are used in double-focusing sector instruments to sort molecules by this quantity. When

accelerating ions to the same kinetic energy, their time-of-flight is proportional to the square root of this quantity. For 10 points, name this quantity found on the x-axis of a mass spectrum.

ANSWER: **mass-to-charge** ratio [accept **m/z** ratio; do NOT accept the opposite order; do NOT accept partial answers]

<AW, Chemistry>

9. **A boy climbs up a walnut tree and shakes the branches to feed seven of these people while eating nothing himself. One of these people arrives at a diabetic merchant's house just in time to stop him from beating his slave girl. A cautionary tale about a weaver who dies trying to imitate a mountebank by jumping off a high wall, is told to a man victimized by one of these people and his monkey. After a group of these people murder a man and quarter his body, a tailor is hired to stitch the pieces back together. Two of these people (*) mark a house's front door and chip out a chunk from its front steps, but are foiled when all other houses are defaced similarly. After pouring boiling oil on several of these people hiding in jars, Morgiana performs a sword dance at a dinner so that she can plunge a dagger into the heart of their leader. These people store their treasure in a cave that opens when the words "Open Sesame" are said. For 10 points, name these criminals, forty of whom harass Ali Baba in a tale from the *Arabian Nights*.**

ANSWER: **thieves** [accept word forms; accept synonyms]

<AG, Short Fiction/Miscellaneous>

10. **The creator of this artwork once remarked that the "excruciating experience" of watching gifted people "squander their creative talents on [depicting] teacups" inspired its creation. This artwork incorporated its creator's idea of "central core imagery," which its artist had earlier used in the painting *Through the Flower*. In the first "wing" of this artwork, a circular piece is decorated with a "flower of light" motif inspired by Dante's depiction of the wisdom goddess Sophia. This artwork, which takes up an entire room in the (*) Brooklyn Museum, includes a porcelain floor composed mostly of triangular tiles; the names of 999 significant people from history and legend are written on those tiles. A plate decorated in the shape of a vagina that "belongs" to Emily Dickinson and a setting for the dancer Isadora Duncan appear in, for 10 points, what triangular installation by Judy Chicago?**

ANSWER: *The **Dinner Party***

<IJ, Painting/Sculpture>

11. **One of this author's characters accidentally swallows the transistors for a hearing aid when she goes to take her pills. In another of his plays, an engaged Mormon kills himself by leaping from his apartment window after having sex with a man who had treated him to an evening at the Reading Room followed by a carriage ride in Central Park. In a play by this author, the actress Corrinna Stroller and two nuns are killed by a gift-wrapped bomb built by the eighteen-year old soldier Ronnie, who plots to kill the Pope during his visit to New York. (*) Bananas Shaughnessy and Bunny Flingus are the wife and mistress of the zookeeper-turned-songwriter Artie in this author's play *The House of Blue Leaves*. A two-sided Kandinsky painting revolves above the stage of this author's best-known play, in which Ouisa Kittredge realizes that she is connected to everyone on the planet through only a few people. For 10 points, the conman Paul pretends to be the son of Sidney Poitier in what American playwright's *Six Degrees of Separation*?**

ANSWER: John **Guare**

<AG, Drama>

12. **A two-on-one duel featuring Ajax and Achilles ends when Achilles drives his spear through both a horse and a member of this group riding that horse. Quintus Smyrnaeus describes how the leader of this group wields two spears in one hand, and a longer two-pronged spear gifted by Eris in the other hand. A member of this group is the subject of Book I of the *Posthomeric*, which describes the arrival of this group in Troy one day before the end of the ceasefire after the death of Hector. This group is led by a child of Ares who makes the (*) suicidal decision to fight in the Trojan War as penance for the accidental murder of a family member during a hunt. Thersites is killed when he mocks Achilles for his remorse over slaying, rather than marrying, the leader of these people. Members of this group such as Penthesilea are skilled**

fighters due to their practice of burning off their right breast. For 10 points, name this race of warrior women in Greek mythology.

ANSWER: Amazons

<EK, Legends>

13. **This character places his fingers in his mouth and whistles violently towards the end of the aria “*Son lo spirito che nega sempre.*” This character sarcastically advises to “not open the door” until the “ring is on your finger” in the serenade “*Vous qui faites l'endormie.*” This character describes adulating the power of an object that is “victor over the gods” and “still standing” as he shatters a sword and sings an aria about the golden calf. He titles the best-known opera composed by (*) Arrigo Boito, and is the antagonist of an unfinished opera by Ferruccio Busoni. In his most famous operatic appearance, this character gifts a box of jewelry to a young woman, which prompts her to joyfully sing the Jewel Song. This character’s evil scheme is foiled when a chorus of angels blasts open the walls of a prison and declares that Marguerite has been saved. For 10 points, name this character who beguiles the title protagonist of Charles Gounod’s opera *Faust*.**

ANSWER: Mephistopheles [or Mefistofele; or Méphistophélès; prompt on the devil]

<EK, Other Art>

14. **A mounting called a peniche is used to reduce this phenomenon when testing half-models. In the presence of a wedge with angle $\pi\beta$ [“pi beta”], a component of this phenomenon can be modeled as a power law of order m , which is found through the equation β equals $2m$ over $m+1$. That case of this phenomenon is the Falkner-Skan solution, which is expressed by the ODE β times quantity 1 minus f prime squared plus f double prime plus (*) f triple prime equals zero. Velocity is proportional to the log of the distance from this phenomenon over Kármán's constant according to the law of the wall. The thickness of this phenomenon is proportional to the coefficient of skin friction, and is proportional to 5 over the square root of the Reynolds number for the Blasius solution. This phenomenon was proposed to resolve d'Alembert’s paradox, and is solved for by applying the no-slip condition to the relevant surface. For 10 points, name these regions first proposed by Ludwig Prandtl that form when a fluid passes a solid body.**

ANSWER: boundary layers [accept boundary layer flow]

<AW, Physics>

15. **In an article about “Coping with Methodological Problems in Quantitative Research” on this concept, Wei Pan suggested that all statistical studies on it suffer from a lack of cross-validation. This phrase was first coined in William Petersen's 1966 article “Success Story,” which invokes Horatio Alger as a “patron saint” and criticizes the African-American experience in the novels of James Baldwin. The myth of this concept was first articulated in 2006, after an analysis of (*) income statistics showed that the group described by this phrase may make more money each year, but their associated families are usually much larger. Various articles named for this concept suggests that this concept is the “dark side of the American Dream” since it deemphasizes the urban underclass since this group has “outwhited the whites.” Southeast Asians are often excluded from the term indicating, for 10 points, what concept, that often describes Asian-Americans, since they have achieved socioeconomic status greater than that of whites?**

ANSWER: model minority

<IJ, Social Science>

16. **This king placed his absolute confidence in the Oracle at Delphi after she correctly predicted he was making his favorite dish, turtle and goat stew, at the moment. An opposing ruler captured this king after using dromedary camels to send his cavalry into panic through their distinctive smell. This ruler dreamed that his son Atys would be killed by an iron spear, foreshadowing Atys’s actual death *via* a poorly thrown spear during a boar hunt. According to Herodotus, this ruler was told that the (*) happiest and second-happiest men to ever live were not him, but rather the soldier Tellus and the brothers Cleobis and Biton, in a conversation with Solon. This ruler’s downfall came after he unwisely interpreted the message that “a great empire would be destroyed” as a guarantee of his own victory. This ruler’s great wealth was used to sponsor the construction of the Temple of Artemis at Ephesus, and under his rule, an alloy of gold and**

silver called *electrum* was used to make some of the earliest coins. Cyrus the Great conquered the kingdom of, for 10 points, what last king of Lydia?

ANSWER: Croesus

<BL, European History>

17. **This poet asked “For what is life, if measured by the space / Not by the act?” in an unusual Pindaric ode alternating sections marked “The Turn,” “The Counterturn,” and “The Stand,” celebrating the “immortal memory and friendship” of two of his best buds. This poet wrote that “other edifices,” when they see the title structure, “May say their lords have built, but thy lord dwells,” at the end of his poem addressed to Philip Sidney’s estate. This author of the earliest major country house poem, “To (*) Penshurst,” wrote a poem whose speaker notes that the “rosy wreath” he got back from his lover smells “Not of itself, but thee.” This author wrote that “he was not for an age, but for all time!” in his poem “To the Memory of My Beloved, the Author Mr. William Shakespeare,” which serves as the preface to the First Folio. The Cavalier poets self-identified as the “Sons of” this author, whose best-known lyric opens: “Drink to me with only thine eyes.” For 10 points, name this poet whose “Song: To Celia” appears in his play *Volpone*.**

ANSWER: Ben Jonson [or Benjamin Jonson]

<AG, Poetry>

18. **As an infant, when Rabbeinu Tam touched one of these objects belonging to his grandfather Rashi, Rashi sagely predicted that they would one day engage in a theological debate pertaining to them. The statement “Barukh shem k’vod” is uttered so as to avoid taking God’s name in vain while reciting a blessing over one of these objects. The first of the Chabad mitzvah campaigns successfully taught hundreds of thousands of people to use these objects. The letter *shin* molded on one of these objects combines with two (*) knots shaped as the letters *dalet* and *yud* on two of them, to form the word *Shaddai*, one of the names of God. One of these objects contains one large compartment in which a single strip containing four passages can be deposited, whereas in the other, there is a slot for each of those passages. For 10 points, name these parchment-filled black leather boxes attached to the upper arm and forehead, worn by Jewish men during morning prayers.**

ANSWER: tefillin [or totafot; or phylacteries; or phylacterion]

<AG, Religion>

19. **A cell that serves as a developmental precursor to these structures appears to have a “picket-fence” morphology due to Tomes’ projections. Pits called perikymata indicate the termination of incremental lines known as Striae of Retzius in a constituent tissue of these structures, whose basic units are called either prisms or rods. As these structures develop, the inner epithelial layers abutting the cervical loop disappear, creating a structure named for Oskar Hertwig. Four numbers separated by periods appear in both the numerator and denominator of a (*) “formula” used to quantify these structures. The process by which these structures become visible is termed their “eruption.” The alveolar bone connects to these structures by a set of tissues that includes the cementum. Each of these structures has a uniquely shaped pulp chamber, which when inflamed must be addressed with root canal therapy. For 10 points, name these enamel-covered structures used by vertebrates to chew and bite food.**

ANSWER: teeth [or word forms; prompt to be less specific on enamel before mentioned; prompt to be less specific on root before mentioned]

<AG, Biology>

20. **Two resistance groups in this country partnered with the British SOE to successfully sabotage a vital railway viaduct in Operation Harling. Roving groups of partisan fighters in this country called *andartes* launched hit-and-run attacks in mountainous regions against collaborationist troops generically called Security Battalions. The top British ace of World War II, Pat Pattle, was shot down over this country, an event recalled in *Flying Solo* by (*) Roald Dahl, who also flew missions over this country. In this country, the village of Distomo was burned to the ground and its population massacred in a brutal reprisal. October 28 is celebrated annually in this country as “No Day,” commemorating a fanciful one-word rejection of Benito Mussolini’s ultimatum by its military dictator, whose 4th of August Regime ended in 1941. For 10 points, name this Balkan country,**

which was occupied by Axis forces during World War II following the death of its dictator Ioannis Metaxas.

ANSWER: **Greece** [or **Hellenic** Republic; or **Hellas**; or **Elliniki** Dimokratia]

<BL, European History>

Bonuses

1. Answer the following about amino acid biosynthesis, for 10 points each.

[10] This name is given to amino acids, such as histidine, methionine, and valine, that *cannot* be biosynthesized by humans and must be obtained from the diet.

ANSWER: **essential** amino acids

[10] Transamination of this four-carbon compound gives rise to aspartate, which in turn can be converted into a family of amino acids including lysine, asparagine, and methionine.

ANSWER: **oxaloacetate**

[10] The sequential action of ASL and ASS can synthesize this amino acid from citrulline in the urea cycle. That mode of production is scaled up in the immune response to meet the needs of iNOS, which catalyzes the production of nitric oxide from this amino acid.

ANSWER: **arginine** [or **R**]

<AG, Biology>

2. Answer the following about medieval legends concerning Jewish people, for 10 points each.

[10] According to legend, the sixteenth-century rabbi Judah Loew used this material to create a golem and protect the Jewish ghetto of Prague.

ANSWER: **clay** [or **mud**; or **earth**; or **stone**; or obvious equivalents]

[10] Medieval Christians claimed that, as punishment for performing this foolish action, the Wandering Jew was condemned to aimlessly travel the Earth until the Second Coming.

ANSWER: he **mocks Jesus** on his way to the Crucifixion [or he **taunts Jesus**; or obvious equivalents]

[10] In another legend, a Jewish man named Andreas uses his authority as one of these people to find his long-lost father Simeon. He then reveals his identity in a game of chess by using a move only the two of them know.

ANSWER: **pope**

<EK, Legends>

3. After taking some amphetamine, Nick Land wrote an essay about this movement, stating that its members hold that "democracy is not merely doom, it is doom itself." For 10 points each:

[10] Name this movement, sometimes called neo-reactionism. Its principles were inspired by the Italian author of *The Crisis of the Modern World*, and laid out by the blogger Mencius Moldbug.

ANSWER: **Dark Enlightenment**

[10] The "Dark Enlightenment" is often seen as an inspiration for the alt-right, which includes this former Breitbart editor and author of the upcoming memoir *Dangerous*. His first name and last initial are acceptable.

ANSWER: Milo **Yiannopoulos** [accept **Milo Y.**]

[10] Many of the ideas of the Dark Enlightenment come from this social Darwinist pamphlet by Ragnar Redbeard, whose introduction asserts that "the natural law is tooth and claw."

ANSWER: **Might is Right** [or *The **Survival of the Fittest***]

<IJ, Geography/Current Events/Other>

4. In this play, two athletic male sister-nurses accompany an attractive woman afflicted with sleeping sickness, who wards off the advances of Duperret. For 10 points each:

[10] Name this play, set in the Charenton asylum, in which a play about a pivotal moment in the French Revolution is staged as therapy for the inmates. It was written by Peter Weiss.

ANSWER: **Marat/Sade** [or *The **Persecution and Assassination of Jean-Paul Marat as Performed by the Inmates of the Asylum of Charenton Under the Direction of the Marquis de Sade***; or *Die **Verfolgung und Ermordung Jean Paul Marats dargestellt durch die Schauspielgruppe des Hospizes zu Charenton unter Anleitung des Herrn de Sade***]

[10] The Little Girl drowns in a fountain and The Boy shoots himself with a revolver, as they attempt to stage the play *Mixing It Up* in this Italian dramatist's *Six Characters in Search of an Author*.

ANSWER: Luigi **Pirandello**

[10] In this play by Ira Levin, Sidney Bruhl successfully induces a fatal heart attack in his wife Myra by staging the death of his student Clifford Anderson to obtain the script of the title play, which, as it turns out, is based on the plot to kill Myra.

ANSWER: **Deathtrap**

<AG, Drama>

5. In a November 2013 performance of Mahler's Symphony No. 9, this conductor paused after the first movement to throw cough drops at the audience. For 10 points each:

[10] Name this conductor of the San Francisco Symphony and host of *Keeping Score*, a program that educates viewers on classical music through radio talks, a PBS television series, and a namesake website.

ANSWER: Michael **Tilson Thomas** [prompt on Thomas; prompt on MTT]

[10] In a 1981 concert, Tilson Thomas performed a piano four hands arrangement of *The Rite of Spring* with this conductor and longtime host of the educational *Young People's Concerts*.

ANSWER: Leonard **Bernstein**

[10] Tilson Thomas produced an acclaimed 2014 recording of this Bernstein musical about rival gangs called the Sharks and the Jets.

ANSWER: **West Side Story**

<EK, Music/Opera>

6. Supposedly, this ruler refused to escape his death-row cell because it meant shaving his impressively thick side-burned beard. It didn't matter anyways, since his beard was cut from him as a souvenir after his death. For 10 points each:

[10] Name this emperor of Mexico installed on the throne as a puppet by Napoleon III. He was executed on the orders of Benito Juarez after his capture.

ANSWER: **Maximilian I** of Mexico

[10] Maximilian was captured after losing a siege of this city, and his execution took place here too. This city was Mexico's temporary capital after Mexico City was captured during the Mexican-American War, and was where Venustiano Carranza promulgated his Constitution of 1917.

ANSWER: Santiago de **Queretaro**

[10] Before his execution, Maximilian bribed his firing squad to avoid doing this specific action. Joachim Murat also famously told his firing squad to fire "straight to the heart" but not to do this action.

ANSWER: **shoot** him in the **face** [or **shooting** him in the **head**; accept "Straight to the heart but spare the **face**"]

<BL, World History>

7. The manifesto of this movement demands the right "to enlarge the scope of the poet's vocabulary with arbitrary and derivative words." For 10 points each:

[10] Name this literary movement whose members engaged in language creation experiments known as *zaum*, and issued the manifesto "A Slap in the Face of Public Taste." Vladimir Mayakovsky emerged as co-leader of its Russian offshoot.

ANSWER: Russian **Futurism** [accept word forms]

[10] This co-creator of *zaum* used it to formulate so-called languages of the stars, the gods, and the birds, which make up the bulk of his cosmic drama *Zangezi*. His poem "Snake Train" serves as the prologue to the Futurist opera *Victory over the Sun*.

ANSWER: Velimir **Khlebnikov** [or Victor Vladimirovich **Khlebnikov**]

[10] The Moscow-based Futurist society Tsentrifuga encouraged this young poet to publish his inaugural collection *Twin in the Clouds*. He wrote the poem "Hamlet" from the point of view of his character Yuri Zhivago.

ANSWER: Boris **Pasternak** [or Boris Leonidovich **Pasternak**]

<AG, Poetry>

8. Sadly, a reproduction of these works was lost in the Costa Concordia shipwreck in 2012. For 10 points each:

[10] Name these artworks, one of which shows a man assembling a barrel from its interior. A set of ten paintings its artist later added to these works depicts a timberyard and "pleasure district."

ANSWER: *Thirty-Six* **Views of Mount Fuji**

[10] Perhaps the most reproduced of this artist's *Thirty-Six Views of Mount Fuji* is *The Great Wave off Kanagawa*, which inspired Roy Lichtenstein's *Drowning Girl*.

ANSWER: Katsuhika **Hokusai**

[10] Hokusai achieved a gradation of color in his prints by using this technique, in which a single ink of two different colors is applied to a block at once.

ANSWER: **bokashi**

<IJ, Painting/Sculpture>

9. The Gothic Bible adhered to this belief, which was fervently held to and preached by Ulfilas, who translated the Bible into Gothic. For 10 points each:

[10] Name this belief that was declared to be heretical at the 325 Council of Nicaea. This belief rejected the Trinity, placing Jesus as semi-divine and subordinate to the Father.

ANSWER: **Arianism**

[10] The 325 Council of Nicaea was called during the tenure of this pope, who was also gifted vast amounts of land and power by the forged Donation of Constantine.

ANSWER: **Sylvester I**

[10] The Donation of Constantine was supposedly given out of gratitude for Sylvester performing this action to Constantine. Other historical attempts at performing this action included drinking dog blood and *chaulmoogra* oil.

ANSWER: **curing** him of **leprosy** [accept **treating** his **leprosy**; prompt on **making** him **healthy**; prompt on **curing** his **disease**]

<BL, European History>

10. These entities can be depicted using Newman projections. For 10 points each:

[10] Name this type of isomer which differ solely by rotations around a single bond. They can be labeled as eclipsed or staggered.

ANSWER: **conformers** [or **rotamers**; or **conformational isomers**]

[10] This 6-carbon cycloalkane prefers to exist in a chair conformation, while its substituents preferably exist in equatorial positions.

ANSWER: **cyclohexane**

[10] Steric bulk of a group can be predicted using a table of these measured values of the difference in free energy for a monosubstituted cyclohexane's axial and equatorial conformations. They are limited however in their lack of ability to predict electronic contributions.

ANSWER: **A-values**

<AW, Chemistry>

11. Because one of these texts consists of the single line "A marvel occurred on the road: water turned to bone," it is often combined with the preceding one. For 10 points each:

[10] Name this genre, several Latin language examples of which appear in the *Enigmata* of the seventh-century abbot Aldhelm, including his *Lorica*, which was translated into the thirty-third piece of this type in the Exeter Book.

ANSWER: **riddles**

[10] Riddles are a staple of the literature of this language, which also includes poems such as *Caedmon's Hymn* and *Beowulf*.

ANSWER: **Old English** [or **Anglo-Saxon**]

[10] This scholar of Old English penned a riddle that reads "A box without hinges, key or lid, / Yet golden treasure inside is hid," whose answer is "an egg." He argued that the weight of critical literature on *Beowulf* has swamped the original poem itself, in his lecture *Beowulf: The Monsters and the Critics*.

ANSWER: J.R.R. **Tolkien** [or John Ronald Reuel **Tolkien**]

<AG, Miscellaneous/Short Fiction>

12. The honorific *RadhiAllahu'anhu*, meaning "Allah is pleased with him," is uttered after mentioning male members of this group. For 10 points each:

[10] Give this umbrella term for people who personally met Muhammad, believed in him, and died as a Muslim. It includes his wives and prominent personalities like Abu Bakr and Ali.

ANSWER: **companions** [or *as-sahabah*]

[10] Mentions of Muhammad himself are almost always followed by this complimentary phrase, known as the *salawat*. Although it is frowned upon to abbreviate this phrase, you may do so when answering.

ANSWER: **peace be upon him** [or *alayhi as-salam*; or *salla Allahu alayhi wa-alihi wa-sallam*; or **pbuh**; or **saws**]

[10] When mentioning Ali, it is customary to say a phrase asking Allah to perform this action on him, in recognition of his refusal to bow to any idols.

ANSWER: may Allah **ennoble his face** [or *Karram-Allahu wajhahu*; accept synonyms for ennoble such as **dignify** or **exalt**]

<AG, Religion>

13. This character's beauty so distracts a group of women peeling oranges with sharp knives that they cut their fingers. For 10 points each:

[10] Name this character who is antagonized by the malicious dwarf Dudu, a possible caricature of Nazi officials, in a series of books culminating in a novel in which the warden Mai-sachme puts him in charge of prisoners, titled: [this character] *the Provider*.

ANSWER: **Joseph** [or *Joseph and His Brothers*; or *Joseph und seine Brüder*]

[10] This German author spent the better part of sixteen years writing the four-volume *Joseph and His Brothers*, his first foray into long fiction after finishing *The Magic Mountain*.

ANSWER: Thomas **Mann** [or Paul Thomas **Mann**]

[10] Mann drew parallels between Joseph's wise governance of Egypt in *Joseph the Provider* and the economic policies advanced by the leader of this country, where he finished the tetralogy in exile during the Second World War, joining other German expatriates like Adorno and Brecht.

ANSWER: **United States** of America [or **USA**; or **America**]

<AG, Long Fiction>

14. Answer some questions about the oft-neglected history of Antarctica, for 10 points each:

[10] After his ship *Endurance* became trapped and sank in Antarctic sea ice, this explorer and his crew first camped on ice floes, then headed to Elephant Island, then finally sailed 720 miles across open ocean to South Georgia Island to safety.

ANSWER: Ernest **Shackleton**

[10] This British explorer sailed around Antarctica with his ships *Erebus* and *Terror*, which were built with especially thick hulls useful for breaking through ice. Later, this man helped lead the search for John Franklin's doomed expedition to find the Northwest Passage.

ANSWER: John Clark **Ross**

[10] Suffering from severe frostbite and feeling the burdened the rest of the team, Lawrence Oates walked out into an Antarctic blizzard during the ill-fated Scott expedition to reach the South Pole with these chilling last words.

ANSWER: **"I am just going outside and may be some time"**

<BL, Other History>

15. Judgments are held to be the sources of this concept according to Allan Gibbard's book *Wise Choices, Apt Feelings*. For 10 points each:

[10] Name this concept from ethical philosophy, which is what agents ought to do in contrast to positive or descriptive statements. "The Sources of" this concept are the subject of a book by Christine Korsgaard.

ANSWER: **normativity** [or **norms** or **normative** statements]

[10] Allan Gibbard thus champions a form of this philosophical position holding that normative statements are assertions of an agent's underlying emotions, and not statements of fact. Terence Horgan put forth a "cognitive" form of this view.

ANSWER: **expressivism** [or **expressivity**]

[10] Expressivism rejects the theory of morality laid out in this Prussian philosopher's *Groundwork for the Metaphysics of Morals*, which contends that there are "moral facts."

ANSWER: Immanuel **Kant**

<IJ, Thought>

16. According to a popular story, Benjamin “Beast” Butler waved one of these objects belonging to a Northerner while giving a speech in the House of Representatives condemning the Ku Klux Klan. For 10 points each:

[10] Name these objects, which Republican candidates figuratively “waved” when they reminded Democrats of the sacrifices made by Northerners during the Civil War.

ANSWER: “waving the **bloody shirt**”

[10] Men in this state started wearing red shirts in 1876 in order to mock “waving the bloody shirt,” harassing blacks and carpetbaggers while being encouraged by governor Wade Hampton. This state was the first to secede from the Union.

ANSWER: **South Carolina**

[10] In 1898, a resurgence of the practice of wearing red shirts “electrified” the people of this city, whose mayor Silas P. Wright was overthrown by a white mob led by Alfred M. Waddell.

ANSWER: **Wilmington**, North Carolina

<BL, American History>

17. I scream, you scream, we all scream for alchemy! For 10 points each:

[10] SQLAlchemy [“S Q L alchemy”] is this kind of program that allows one to manipulate a database through a programming language; in SQLAlchemy’s case the language is Python. Other examples of this kind of program include Hibernate.

ANSWER: **object-relational mapping** software [or **ORM**]

[10] The University of Washington puts out the Alchemy AI software package, which implements this mathematician’s namesake “networks.” Those networks named for him are graphs in which a state is not dependent on past states.

ANSWER: Andrey [Andreyivich] **Markov** [accept **Markov** chain or **Markov** networks]

[10] Alchemy is also the name of a microprocessor made by this company, the second-largest maker of chipsets, behind Intel.

ANSWER: **AMD** [or **Advanced Micro Devices**, Inc.]

<IJ, Math/Other Science>

18. An equation described by this adjective sets the marginal rate of substitution between consumption now and the future equal to the gross interest rate. For 10 points each:

[10] Give this adjective that describes economic methodologies that analyze how an agent makes economic and financial decisions at various points in time.

ANSWER: **intertemporal** economics [or **intertemporal** choice]

[10] This statement proposed by Franco Modigliani, which holds that consumers factor in their expected time to live into their savings plan, incorporates many concepts from intertemporal choice theory.

ANSWER: **life-cycle** hypothesis

[10] In many intertemporal choice models, this quantity is higher as one moves along into the future. This quantity is defined as the amount of use or value one extracts from a good or service.

ANSWER: **utility** [accept marginal **utility**]

<IJ, Social Science>

19. Bismuth antimonide was the first substance to be experimentally observed to act as one of these things. For 10 points each:

[10] Name these substances which contain protected conduction states that only appear on their surface.

ANSWER: **topological insulators**

[10] This 2D material is predicted to act as a 2D topological insulator. This substance, which was allegedly grown on a bismuth telluride support via molecular beam epitaxy, has the same hexagonal structure as graphene.

ANSWER: **stanene**

[10] Much like regular insulators, topological insulators contain a large range of energies which electrons cannot occupy. That range of energies is known by this name due to being in between the conduction and valence bands.

ANSWER: **band gap**

<AW, Physics>

20. This man's first film was a 1913 short depicting the Galveston Hurricane, which he survived as a youth. For 10 points each:

[10] Name this American director, who made a three and a half-hour long version of *War and Peace*. His directing career spanned over 65 years, concluding with 1980's *The Metamorphosis*.

ANSWER: King **Vidor** [or King Wallis **Vidor**]

[10] King Vidor was an uncredited director of the scenes in *The Wizard of Oz* set in this U.S. state, which are shown entirely in sepia colors.

ANSWER: **Kansas**

[10] King Vidor also directed *Beyond the Forest*, in which this actress's character, a wife turned blackmailer, famously says "what a dump!" She also played Margo Channing, an actress, in *All About Eve*.

ANSWER: Bette **Davis**

<IJ, Other Art>