

PRISON BOWL VIII

Questions written and edited by Hunter College High School (Gilad Avrahami, Sam Brochin, Christopher Chilton, Prithi Chakrapani, Swathi Chakrapani, David Godovich, Lily Goldberg, Ada-Marie Gutierrez, Sarah Hamerling, Sophie Ho, Diane Hwangpo, Joshua Kwan, Chloe Levine, Alice Lin, Helen Lu, Nancy Lu, Daniel Ma, Ria Modak, Brent Morden, Priya Srikumar, Brendan Sullivan, Albert Tai, Luke Tierney, Karina Xie, William Xie), Virginia Commonwealth University (Sarah Angelo, George Berry, Nathaniel Boughner, Akhil Garg, Cody Voight, Najwa Watson), Rohan Nag, and Zihan Zheng.

Finals

Tossups

1. Disagreements over the administration of Thurgau contributed to the Kappel Wars in this country. This country was briefly united under French control as the Helvetic Republic. One famous religious leader helped to found a universal education system for a city in this country in 1535, and a Confederation named after this country was formed at the Congress of Vienna in 1815. A series of 19th and 20th century treaties signed in this country established the standards of war under international law. For ten points, name this country in which *The Institutes of the Christian Religion* were written by John Calvin.

ANSWER: Switzerland

2. In this work, a villain disguised as a beggar kills the vulture Jatayu as he attempts to protect a woman from abduction in the Panchavati forest. Because the protagonist of this work is exiled into the wilderness for 14 years, Bharata reluctantly takes his job. Another character in this work must undergo a test of fire in order to prove her purity. In this work, a character convinces a kingdom of monkeys to help him search for his wife; however, due to laziness only the strongest monkey hero, Hanuman, arrives to help. For 10 points, name this famous Indian epic in which Rama journeys to Lanka to slay the demon king Ravana and rescue his wife Sita.

Answer: *The Ramayana* <JK>

3. One of this man's experiments had its subjects speak shadow words provided by a radio. This man introduced the concept of an individual who is recognized from daily activities but is never interacted with, called the "familiar stranger." Another one of this man's experiments asked its subjects to mail packages to an individual in Sharon, Massachusetts, and led to the phrase "six degrees of separation." This conductor of the Small World Experiment attempted to test if Adolf Eichmann's actions were justified by the fact that he was just following orders. For 10 points, name this Yale psychologist who asked his subjects to administer electric shocks to actors.

ANSWER: Stanley Milgram <AT>

4. High-quartz-content soils in this biome are called podzol or spodosol. Wet or dry acidic bogland in this biome is called muskeg and houses large peat deposits. Ermines in this biome hunt prey like snowshoe hares in its dense underbrush. Cutin covers some types of trees' leaves in this biome, and "flagging" trees growing away from the wind are common here. Wildfires allow the Jack Pine to release its seeds and for pests like the spruce budworm to devastate this biome, which extends in a ring around the Arctic Circle. For 10 points, name this largest terrestrial biome, found south of the tundra and characterized by coniferous forests.

ANSWER: taiga [accept boreal forest] <NL>

5. A previous study for this work shows that its artist originally planned on incorporating cannibalism, and in preparation for it, Alexandre Correard was commissioned to create a life-sized model of its subject. At the Hospital Beaujon, this painting's artist studied severed limbs and human corpses as inspiration. In the foreground of this work, a corpse's leg is wrapped around a beam of wood, and in the background, a tiny ship can be seen. The central figures in this work form a pyramid-like structure, which culminates in a shirtless man waving an orange cloth. For 10 points, name this work which depicts the survivors of a shipwreck, a painting by Theodore Gericault.

ANSWER: *The Raft of the Medusa* <AT>

6. In one of this author's short stories, the protagonist writes a letter asking for permission to kill a pair of canaries and bury them with his wife. Another one of his works centers on Old Eguchi's visits to the title location, where he sleeps with narcotized virgins. This author of *The House of the Sleeping Beauties* also wrote a novel Hideo mixes up Chieko and Naeko. Several of his "Palm-of-the-Hand" stories accompany his most well-known novel, and that novel centers on Shimamura's affair with the geisha Komako during his visit to the titular Japanese region. For 10 points, name this author of *The Old Capital* and *Snow Country*.

ANSWER: Yasunari Kawabata <SoH>

7. This philosopher was accused of striking a student in the Haidbauer incident and during an argument with Karl Popper, this man allegedly waved a fireplace poker in Popper's face. This thinker devised an experiment in which several people with boxes all refer to the contents of that box as a "beetle." That beetle-in-a-box experiment was part of his refutation of private languages. "The world is everything that is the case" is one of seven numbered propositions this man put forward in a book that concludes "whereof one cannot speak, thereof one must be silent." For 10 points, name this Austrian philosopher and author of *Philosophical Investigations* and *Tractatus Logico-Politicus*.

ANSWER: Ludwig Wittgenstein <GB>

8. The Chengkuo Canal irrigated part of this river's basin using water from the Wei River during the Qin dynasty. During the siege of Kaifeng, this river's dikes were disastrously broken and allowed for that city's immediate capture. An 1887 flood of this river immediately preceded the Taiping Rebellion. Pictographs, clay, oracle bones, and bronze utensils along this river provide evidence of the Shang dynasty, the successors to the Xia. The Grand Canal built by the Sui dynasty connected the Yangtze River with this one. For 10 points, name this dangerous and colorful Chinese river that accumulates soil called loess as it flows east.

ANSWER: Yellow River (also called the Huang He)

9. One character in this novel is given Delaford Parsonage after being disinherited in favor of his brother. Another character in this novel impregnates Eliza Williams and later returns a lock of hair and love letters after discovering that the recipient is poor. Lucy Steele marries Robert at the end of this novel, though she is previously engaged to his brother, Edward. After discovering that his true love is deathly ill, John Willoughby confesses his love to her sister. For 10 points, name this Jane Austen novel centering on Elinor and Marianne Dashwood.

ANSWER: Sense and Sensibility <SoH>

10. Bertrand's theorem for a radial one of these objects states that it is one of two force potentials with bound orbits for which a closed orbit also exists. An equation for resonant frequency of these objects is one half pi times angular frequency and is represented by a sinusoidal graph. When these objects are "damped," a frictional force opposes the velocity of those objects, and Hooke's law is an equation for this type of system because the restoring elastic force F is directly proportional to displacement. For 10 points, name this type of system exemplified by springs and pendulums.

ANSWER: simple harmonic oscillator [accept SHO] <JK>

11. On the second day of this annual festival, the verbal counting of 50 days known as the Omer begins. The traditional meal that is eaten in celebration of this festival takes 15 steps that are parallel to the 15 Psalms known as the Shir HaMa'alot. Other parts of the meal eaten during this holiday festival include karpas and maror. Children look for the afikoman after the seder in this event, and the youngest child traditionally asks the Four Questions. For 10 points, name this Jewish holiday commemorating the freedom of the Israelites from Egypt, in which Jews are required not to eat leavened bread and instead traditionally eat matzah.

ANSWER: Passover [accept Pesach] <GA>

12. One story set in this city sees Freddie Drummond create an alter ego named Big Bill Totts. That story, "South of the Slot," is by Jack London. This city to which siblings Dave, Beth, and Toph move after the death of their parents is the setting for Dave Eggers' *A Heartbreaking Work of Staggering Genius*. Joel Cairo offers \$5,000 for a black figurine of a bird that had arrived in this city, the home of detective Sam Spade in *The Maltese Falcon*. Sal Paradise meets Dean Moriarty in Denver on his way to this city, and Lena St. Clair and Waverly Jong appear in a novel set in this city's Chinatown. For 10 points, name this Bay Area city, the setting of *The Joy Luck Club* and the initial destination of Jack Kerouac's *On the Road*.

ANSWER: San Francisco <LG>

13. Media furor over this president's "Travelgate" scandal led his Deputy White House Counsel, Vince Foster, to resign and commit suicide. This president endured another scandal over improper loans between Madison Guaranty and the Whitewater Development Corporation, partly owned by him. This president's administration instituted the "Don't ask, don't tell" policy. He became president after serving as Governor of Arkansas and once claimed in a press conference that he "did not have sexual relations with that woman, Miss Lewinsky." For 10 points, name this president whose VP was Al Gore and who is married to former Secretary of State Hillary Rodham.

ANSWER: William ("Bill") Jefferson Clinton <CV>

14. This organelle utilizes the molecular chaperone BiP in its translocons, as well as the coat proteins COP I and COP II. An action potential relies on the direct coupling between DHPRs and a variety of this organelle that stores calcium, the sarcoplasmic type. This organelle, which is connected to the nuclear envelope, is the site of steroid synthesis, as well as the conversion of toxins into water-soluble toxins. It is comprised by flat disks called cisternae, and the outsides of this organelle are studded in ribosomes, where protein synthesis occurs. For 10 points each, name this cellular organelle coming in "smooth" and "rough" varieties.

ANSWER: endoplasmic reticulum (or ER; accept smooth ER or rough ER) <AT>

15. In the third act of this play, one character must perform a series of magic tricks, including a ventriloquist feat, after which another character professes his love for her. Another character in this play is a senile manservant nicknamed "Twenty-Two Calamities." That character's real name is Firs. A character in this play exclaims "Light of my being! My springtime!" as he says goodbye to Anya, and he is called an "eternal student" in the second act. In this play, Varya is in love with Lopahkin, who eventually buys the title estate from Madame Ranevsky in a debt auction. For 10 points, name this Anton Chekhov play that concludes with the sound of axes offstage.

ANSWER: *The* Cherry Orchard <SoH>

16. This composer was forced to move the setting of an opera about the assassination of Gustav III to Boston. The death of Alessandro Manzoni inspired this composer of *Un ballo in maschera* to write his *Requiem* mass. Manrico discovers he is not the child of Azucena after hearing her sing "Stride la vampa" in an opera by this composer's opera that includes a chorus of gypsies using hammers to rhythmically strike a series of anvils. An opera by this composer of *Il Trovatore* closes with the Temple of Vulcan being used to bury alive the lover of the title Ethiopian princess. For 10 points, name this Italian composer of *Aida*.

ANSWER: Giuseppe Verdi <GB>

17. This river was initially spanned by the Cathedral Bridge, which was then replaced by the Hohenzollern. The source of this river is at Lake Tomasee, and it is called the "Vorder" until it merges with its "Hinter" branch. This river forms an inland delta as it flows into Lake Constance, and the cities of Bonn and Cologne lie on its shore. This river, which winds around Lorelei rock, has tributaries called the Main and the Ruhr. In its Alpine course, this river forms the border between Switzerland, Liechtenstein, and Austria. For 10 points, name this river that flows through Western Germany.

ANSWER: Rhine River <DM>

18. A dying John Calhoun invited Senator William Gwin from this state for an interview in which he predicted the destruction of the South. The Rancheria Act was specifically established for this state, which was the origin of the case *US v. Kagama*. Along with Texies, Arkies, and Missies, Okies were the majority of Depression-era migrant farm workers in this state. Franciscan friar Junipero Serra founded nine missions in this state. The first Republican candidate for President was a Senator from this state, and that man was John C. Fremont. For 10 points, name this state where the Bear Flag Republic was suppressed.

ANSWER: California

19. A list of twenty of these substances includes a compound derived from glycine and tris and was developed by Norman Good, who developed criteria to evaluate their effectiveness. Britton and Robinson name a "universal" type of these substances, which naturally appear in soil to counteract the effects of acid rain. Blood contains another example of them exemplified by carbonic acid and bicarbonate. The Henderson-Hasselbalch equation uses pKa and the concentrations of conjugate acid and base to calculate the pH of these substances, which are often made of a weak acid and its conjugate base. For 10 points, name these substances which resist changes in pH.

ANSWER: buffers [accept buffering solution/agent] <BM>

20. One work by this composer sees the piano imitate the sounds of a creaking weathervane and the call of a posthorn in a cycle set to 24 poems by Wilhelm Müller. A slow opening section in D minor represents the theme of death in this composer's *Death and the Maiden*, while this composer wrote two symphonies in C major nicknamed "The Little" and "The Great." This composer of *Winterreise* notably wrote music to accompany a poem in which a young boy riding with his father on horseback is killed by The Erlking. For 10 points, name this Austrian composer of the *Trout Quintet* and an unfinished Eighth Symphony.

ANSWER: Franz **Schubert** <BM>

TB. This man adapted a Nubian love song and attempted to emulate the sounds of frogs and crickets along the Nile in his "Egyptian" piano concerto. He wrote an opera featuring the aria "My heart opens itself to your voice, and included a repeating G, B flat, G, E flat theme in one of his piano pieces. This composer of *Samson and Delilah* quoted a slow-down version of Offenbach's "Can-Can" in another one of his pieces. A C major chord opens the Maestoso portion of his *Organ Symphony*, and he used a xylophone to depict rattling bones in various works. For 10 points, name this French Composer of *Danse Macabre*, who included "The Swan" in his *Carnival of the Animals*.

ANSWER: Charles-Camille **Saint-Saens** <AT>

Bonuses

1. The synchro- variety of this device guides particles along a path with a constant radius. For 10 points each:

[10] Name this type of particle accelerator which uses applied electric fields to accelerate particles in an outward spiral. The largest one, TRIUMF, is located in the University of British Columbia.

ANSWER: cyclotron

[10] This other spiral-shaped object is a coil of wire wrapped into a tight helix. When electricity flows through this object, its magnetic field approximates that of a dipole.

ANSWER: solenoid

[10] This quantity refers to the amount of moving charge in a system and has units of amperes.

ANSWER: current <BM>

2. Since the release of the documentary, *Blackfish*, which describes the abuse of killer whale Tilikum, this marine-life theme park has faced intense public backlash. For 10 points:

[10] This theme park franchise's CEO, Jim Atchison, resigned in January after a string of disappointing financial losses.

ANSWER: SeaWorld

[10] In March, Feld Entertainment declared that this company would no longer use elephants after new light was shed on the abuse of tamed elephants. One objectionable method of keeping elephants in line used by this company was the use of the bullhook, a hooked steel rod which latches onto the trunk of an elephant.

ANSWER: Ringling Bros. and Barnum & Bailey Circus (accept either underlined portion)

[10] In China, these animals are often forced to perform tricks in safari parks. Three government officials from Qingdao resigned after a baby animal from one of these operations fell eleven stories to its death.

ANSWER: tigers <WX>

3. When originally performed, it was followed by the performance of *Proteus*, a satyr play, which has not survived to modern society. For 10 points each:

[10] Name this set of Greek plays in which the title character sets out to avenge his father's death. In the first of these plays, Clytemnestra awaits the arrival of her husband so that she can murder him.

ANSWER: The Oresteia [do not accept Agamemnon, The Libation Bearers, or Eumenides]

[10] The Oresteia was written by this tragic Greek playwright. In his earliest surviving play, he explores the Greek theme of hubris with a story based on his experience in the Persian Wars.

ANSWER: Aeschylus

[10] In this third and final play of the *Oresteia*, Orestes is judged by Athena and eleven others whether he is guilty of murdering his mother, Clytemnestra. In this play, the Furies torment the main character while Apollo protects him.

ANSWER: The Eumenides [accept The Kindly Ones] <GA>

4. When critics accused this man of being soft on defense issues, he took a photo in an M1 Abrams tank, but the PR stunt was accused of being contrived. For 10 points each:

[10] Name this former Governor of Massachusetts and Democratic nominee in the 1988 US. Presidential Election.

ANSWER: Michael Stanley Dukakis

[10] In the 1988 election, Dukakis lost against this vice president of Ronald Reagan. Military actions under his presidency include Operation Desert Storm and Operation Just Cause.

ANSWER: George Herbert Walker Bush [prompt on Bush; accept Bush Sr.; accept Bush 41; do not accept George Walker Bush]

[10] Under Dukakis's governorship, this convicted felon escaped from custody after he was given a furlough. When Dukakis declined to mention the incident, Bush launched a series of advertisements raising awareness about this man.

ANSWER: Willie Horton <AT>

5. This man set a new limit for acceptable violence in film with a scene shot from 77 different camera angles. For 10 points each:
[10] Name this director behind the infamous shower scene in *Psycho* whose films featured such recurring motifs as birds and “the wrong man.”

ANSWER: Alfred Hitchcock

[10] Hitchcock toys with the idea of the audience as voyeur in both *Psycho* and this 1954 film, in which a Jimmy Stewart-played photographer begins to suspect his neighbor of murder while recuperating from a broken leg.

ANSWER: Rear Window

[10] Hitchcock used this term for an item that serves merely to advance a plot. In Hitchcock’s *North by Northwest*, one of these is simply called “government secrets.” The title object of *The Maltese Falcon* is another example.

ANSWER: MacGuffin [or maguffin] <SEA>

6. The Great Rift Valley has lots of large lakes. For 10 points each, name some stuff about them.

[10] This lake is the largest in Africa and ninth-largest in the world. Parts of it are within the countries of Tanzania, Kenya, and Uganda, and it is the source of the White Nile River.

ANSWER: Lake Victoria (accept Nam Lolwe or Nalubaale)

[10] This deepest region of the Valley, as well as Africa itself, lies at the intersection of three tectonic plate boundaries. It contains Lake Asal, which is fed by the Awash River.

ANSWER: Afar Depression

[10] This second largest and second deepest lake in the world lies mostly between Tanzania and the Democratic Republic of the Congo. It’s known for its large concentration of heavy water, and flows into the Congo River system.

ANSWER: Lake Tanganyika <DM>

7. The poet Rumi founded the Mevlevi order of this religious sect, which practices “whirling” during the Sema ceremony. For 10 points each:

[10] Name this mystical sect of Islam that maintains awareness of God by performing dhikr and whose adherents are known as dervishes.

ANSWER: Sufism

[10] This other sect of Islam believes that Muhammad’s successor in the Caliphate is his son-in-law, Ali. Behind Sunni, it is the second-largest denomination in Islam.

ANSWER: Shia (accept Shiites)

[10] These members of Shia Islam believe in a namesake number of divinely ordained successors to the Prophet Muhammad. This group believes that the “hidden Imam,” the Mahdi, will rid the world of evil before Judgement Day.

ANSWER: twelvers (accept Imamiyyah) <NW>

8. This collection opens with a dedication to Theophile Gautier. For 10 points each:

[10] Name this collection, first published in 1857, that addresses the “hypocrite reader” and contains sections like *Spleen and Ideal*.

ANSWER: *Les Fleurs Du Mal* [accept *The Flowers of Evil*]

[10] *Les Fleurs Du Mal* is a collection of poems by this man, also known for his French translations of Edgar Allan Poe.

ANSWER: Charles Baudelaire

[10] The second poem of *Spleen and Ideal* is titled for one of these birds, which the poem calls “kings of the sky.” The title character kills one of these birds in Samuel Taylor Coleridge’s poem “The Rime of the Ancient Mariner.”

ANSWER: albatrosses <SEA>

9. This son of King Pellinore accomplished his most famous quest with Sir Galahad. For 10 points each:

[10] Name this Knight of the Round Table and subject of a namesake epic by Wolfram von Eschenbach. In this epic, he is the father of Lohengrin.

ANSWER: Sir Percival

[10] On his quest, Sir Percival meets this figure, who is wounded in his legs. In some accounts Percival fails to complete his quest because he does not ask a question which would heal this figure.

ANSWER: The Fisher King

[10] Sir Percival was sent on a quest to find this sacred cup in Arthurian legend. It was supposedly used by Jesus during the Last Supper, and can therefore grant eternal life.

ANSWER: Holy Grail <JK>

10. Retroviruses can use the reverse form of this process to produce viral DNA from their RNA genomes. For 10 points each:

[10] Name this process where messenger RNA pairs with DNA before being exported from the nucleus.

ANSWER: **transcription**

[10] These portions of DNA initiate transcription of a particular gene. Transcription factors can act either as an activator or a repressor when binding to these structures.

ANSWER: **promoters**

[10] This core promoter sequence of about 25 to 35 base pairs from the start of the transcription start indicates where a genetic sequence can be read or decoded. It is named for its particular nucleotide sequence.

ANSWER: **TATA box** [accept **Goldberg-Hogness box**] <AT>

11. This man gave the "Tryst With Destiny" speech on August 14th, 1947. For 10 points each:

[10] Name this co-founder of the Non-Aligned Movement who tried to make Maulana Azad the leader of Indian Muslims instead of Mohammad Ali Jinnah.

ANSWER: Jawaharlal **Nehru**

[10] This daughter of Jawaharlal Nehru became India's third Prime Minister, and authorized the creation of India's nuclear program.

ANSWER: Indira **Gandhi**

[10] Indira Gandhi was assassinated by her own bodyguards in the aftermath of this event that led to the 1984 Anti-Sikh Riots. As part of this event all media were taken out of Punjab so they could not report on the army's activity.

ANSWER: Operation **Blue Star** [accept the Indian Army's assault on the Golden **Temple** in **Amritsar**] <GB>

12. Adam Smith wrote a *Theory of [these] Sentiments*. For 10 points each:

[10] Name this term that describes the principles on which people base their judgements. A system of ethics may be based on this concept.

ANSWER: **morality** [or **morals**]

[10] This American psychologist proposed six stages of moral development based on the work of Jean Piaget. He created the "Heinz dilemma," in which Heinz must decide whether to steal an unaffordable cancer drug to save his wife.

ANSWER: Lawrence **Kohlberg**

[10] The last two stages of Kohlberg's theory are given this term. This level of morality includes social contract- and universal principle-based morality.

ANSWER: **post-conventional** <AG>

13. In this poem, the title character, sitting on "the pallid bust of Pallas," is proclaimed a "thing of evil." For ten points each:

[10] Name this poem in which the narrator, "weak and weary," implores the title character to return to "Night's Plutonian shore."

ANSWER: The **Raven**

[10] This poet of "The Raven" and "Annabel Lee" also wrote the short stories, including the *Purloined Letter* and *The Spectacles*.

ANSWER: Edgar Allan **Poe**

[10] In this short story of revenge by Edgar Allan Poe, Montresor tricks and traps Fortunato, a wine connoisseur with a cold, deep within his labyrinthine family crypt.

ANSWER: The **Cask of Amontillado** <KX>

14. Due to the slow news travel time back in the day, Andrew Jackson's victory at the Battle of New Orleans in this war came after the Treaty of Ghent had already been signed and this war over. For 10 points each:

[10] Name this war between the US and Great Britain during which Dolley Madison legendarily saved a portrait of George Washington just before the British burned down the White House.

ANSWER: War of **1812**

[10] During the War of 1812, a bunch of Federalists met at this convention in Connecticut and drafted a list of demands to take to Washington, DC. This meeting backfired badly due to the signing of the Treaty of Ghent and greatly hurt the Federalist Party.

ANSWER: **Hartford** Convention

[10] One attendee of the Hartford convention, Harrison Gray, was the nephew of this Revolutionary War figure whose catchphrase "taxation without representation is tyranny" went viral in the colonies.

ANSWER: James **Otis**, Jr. [Prompt on **Otis**] <CV>

15. Euclid proved that there are an infinite number of these For 10 points each:

[10] Name these numbers, whose only factors are themselves and one. The only even one of these numbers is two.

ANSWER: **prime numbers**

[10] The non-trivial zeroes of this function can be used to estimate the distribution of primes. This function is named after a German mathematician and applies to any constant variable sigma plus i t.

ANSWER: Riemann **zeta function** (prompt on “Riemann function”)

[10] According to the Riemann hypothesis, the real part of any non-trivial zero of the Riemann zeta function is this constant value smaller than one.

ANSWER: **one half** [accept clear equivalents] <BS>

16. In this painting, smoke emanates from Willy Lott’s Cottage, and a brown spotted dog walks along the edge of a body of water. For 10 points each:

[10] Name this painting in which an ox-drawn cart attempts to traverse a stream.

ANSWER: *The* **Hay Wain**

[10] The Hay Wain is a painting by this English romantic artist. He included a rainbow in one of his many depictions of Salisbury Cathedral.

ANSWER: John **Constable**

[10] Another one of Constable’s landscapes is titled for a white one of these animals, which can be seen riding on a boat in that work. In Giorgio de Chirico’s *The Red Tower*, a silhouetted statue of one of these animals can be partially seen.

ANSWER: **horses** <AT>

17. In this novel, the title character has an affair with the playwright Michaelis and later with her gamekeeper, Oliver Mellors. For 10 points each:

[10] Name this novel in which Clifford has been paralyzed from the waist down and refuses Constance’s request for a divorce.

ANSWER: **Lady Chatterley’s Lover**

[10] *Lady Chatterley’s Lover* was written by this English author who described Paul Morel’s relationships with his mother Gertrude Morel and the suffragette Clara Dawes in *Sons and Lovers*.

ANSWER: David Herbert **Lawrence**

[10] Lawrence wrote about Elizabeth Bates when she learns about her husband’s death during a cave-in in this short story. Lawrence later adapted it into a play called *The Widowing of Mrs. Holroyd*.

ANSWER: **Odour of Chrysanthemums** <SoH>

18. These structures can be oriented along the x-, y-, or z-axes and they have a characteristic dumbbell shape. For 10 points each:

[10] Name these structures which can hold up to two electrons and whose namesake subshell can hold up to six. They correspond to an azimuthal quantum number of 1.

ANSWER: **p-orbitals** [prompt on **p** or **orbital**]

[10] These structures involve the overlap of parallel, planar p-orbitals. They characterize alkenes and are represented by two lines drawn between atoms.

ANSWER: **double bonds** (do not accept “pi bond”)

[10] This term represents the sum of all double bonds and rings in a compound. For benzene, it is 4.

ANSWER: Accept any of the following: **elements** of **unsaturation**, **degrees** of **unsaturation**, **index** of **hydrogen deficiency**, **unsaturation index** <BM>

19. Buildings in this city include the Palazzo Pitti and the Uffizi Gallery. For 10 points each:

[10] Name this city, the capital of Tuscany, and at one point, Italy. It was once ruled by the Medici family for nearly 200 years.

ANSWER: **Florence**

[10] This son of Lorenzo de Medici became pope in 1513. He excommunicated Martin Luther from the Catholic Church, and reconstructed St. Peter's Basilica.

ANSWER: **Leo X** [prompt on **Leo**]

[10] This pope was also a Medici. During his papacy, Rome was sacked in 1527 and Henry VIII of England created the Anglican church.

ANSWER: **Clement VII** [prompt on **Clement**] <DG>

20. Johann Strauss the Younger is often considered the "king" of this musical genre. For 10 points each:

[10] Name this style of composition in three-four time, often written to accompany a Viennese dance.

ANSWER: **waltz**

[10] This composer of a *Revolutionary* etude was apocryphally inspired by a dog chasing its tail to write his "minute" waltz.

ANSWER: Frederic **Chopin**

[10] Chopin's other works include a collection of 21 of these short pieces for solo piano. This musical form was originated by Irish composer John Field.

ANSWER: **nocturnes** <GB>

TB. This painting features an anamorphic skull that can only be viewed in its proper proportions when looking at the painting from the top right or bottom left corners. For 10 points each:

[10] Name this painting featuring two men standing next to a shelf featuring still-life objects such as a globe, an astrolabe, and a lute.

ANSWER: **The Ambassadors**

[10] *The Ambassadors* is a painting by this Northern Renaissance German artist. He also produced numerous iconic portraits of Henry VIII.

ANSWER: Hans **Holbein the Younger** [prompt on Hans **Holbein**]

[10] Another Hans Holbein work features a horizontal cross-section of this man lying in a coffin. In this grotesque depiction, this man's eyes roll upward, and his bluish hand is frozen in a claw like position.

ANSWER: **Jesus Christ** [accept either underlined portion, or any clear knowledge equivalents] <AT>