

## 2015 Virginia Tech Academic Competition Occasion (VTACO)

**Written by:** Matt Fleischer, Kara Garvey, Michael Chuber, Brian Mongilio, Eric Chang, Jordan Kuhn, Jesse Johnson, Michael Hundley, Jared Barrow, Alex Apollonio, Hank Alexander, Harry White, Devin Beckstoffer, Matt Jordan, and Joseph Brooks

**Edited by:** Matt Fleischer and Michael Hundley

### Packet 13: Tossups

1. After claiming that he killed a snake, one character in this work has his mouth padlocked by the three ladies who actually killed it. After being handed a portrait of a beautiful woman, one character in this work sings the aria "Dies Bildnis." Another character in this work sings "O Zittre nicht" and she later sings "Der Hölle Rache" upon handing her daughter a dagger to kill Sarastro. In this work, Monostatos is banished to eternal night after plotting to destroy the Temple of Ordeal. At the end of this opera, Pamina, the daughter of the Queen of the Night, falls in love with Tamino. For 10 points, name this opera by Mozart about an enchanted musical instrument.

ANSWER: *The Magic Flute* [or *Die Zauberflöte*]

2. This holiday's "Meshulash" form is celebrated when another of its versions falls on Sabbath. This holiday sees the ceremonial giving of gift baskets called *mishloach manot*, and it also sees the shaking of graggers during the reading of the *Megillah*. The narrative associated with this holiday sees King Ahasuerus build a gallows, and the Talmud instructs adherents of this holiday to drink until the phrases "Blessed be Mordechai" and "Cursed be Haman" become indistinguishable. For 10 points, name this Jewish holiday celebrated on the 14th of Adar that commemorates the story of Esther.

ANSWER: Purim

3. This poem compares the title entity to a "dog with tongue lapping for action." The speaker of this poem claims he has seen "gunman kill and go free to kill again," and also claims to see "the marks of wanton hunger" on the faces of women and children. The speaker of this poem claims to have seen "painted women under the gas lamps / luring the farm boys," and this poem's title place is described as "tool maker, stacker of wheat." For 10 points, name this poem whose title city is referred to as "Hog Butcher for the World," written by Carl Sandburg.

ANSWER: "Chicago"

4. One person with this last name was named Duke of Valentinois by Louis XII of France, and another member of this family became Duchess of Ferrara upon marrying Alfonso d'Este. Pope Callixtus III was a member of this family, as was a pope who issued the bull *Inter Caetera*, one of his Bulls of Donation. That member of this family also established the line of demarcation to separate Spanish and Portuguese claims in the New World used in the Treaty of Tordesillas. For 10 points, name this notorious Spanish-Italian family whose members included Pope Alexander VI and his children Lucrezia and Cesare ("CHEH-zuh-ray").

ANSWER: Borgia Family

5. This event was investigated by a team of which Brent Scowcroft and Edmund Muskie were a part, the Tower Commission. The events of this scandal resulted in a violation of the Boland Amendment, and George H.W. Bush pardoned six men implicated in this event. The main perpetrator of this event was exposed when his letters to John Poindexter were discovered. This scandal, which implicated Oliver North, was intended to get the Hezbollah to release six American prisoners in the Middle East. For 10 points, name this Reagan-era scandal in which money was funneled to a group of rebels fighting against the Sandinista regime in Nicaragua.

ANSWER: Iran-Contra Affair

6. This man once worked with Alexander Lebedev in an attempt to establish a political party, and this non-American leader signed the INF treaty. This leader passed the so-called "Sinatra Doctrine," and he caused controversy when he replaced Andrei Gromyko with Eduard Shevardnadze ("SHEV-ard-NOD-zay"). This successor to Konstantin Chernenko removed troops from Afghanistan and instituted liberal policies such as the "restructuring" Perestroika. President Ronald Reagan told this man to "tear down this wall," which he subsequently did. For 10 points, name this predecessor of Boris Yeltsin, the last leader of the Soviet Union before its collapse.

ANSWER: Mikhail Gorbachev

7. This deity presides over the twelve Diar in Gladsheim. This son of Bestla and Borr worked as a farmhand for Baugi and seduced Gunnlod in order to perform one action, and he collaborated with his brothers Vili and Ve to perform another. In addition to obtaining the Mead of Poetry and defeating Ymir, this father of Vidar and Vali hung from Yggdrasil for nine days and nights to gain knowledge. This deity owns the ring Draupnir, the horse Sleipnir, the ravens Huginn and Muninn, and the spear Gungnir. This deity, who is killed by Fenrir at Ragnarok, sacrificed his eye to drink from the Well of Mimir. For 10 points, name this Allfather of Norse mythology.

ANSWER: Odin [or Woden; or Wodan; or Wodanaz; or Wotan]

8. One author from this country wrote a novel in which Mene joins a war to gain the affection of Agnes. In addition to that author of *Sozaboy: A Novel in Rotten English*, another author from this country depicted Madame Koto asking the spirit-child Azaro to visit her bar in his *The Famished Road*. Yet another author from this country depicted Simon Pilkings preventing Elesin's ritual suicide in one of his plays. This country is home to Ken Saro-Wiwa, Ben Okri, and the playwright of *Death and the King's Horsemen*, Wole Soyinka. For 10 points, name this country that is also the home of the author of *Things Fall Apart*, Chinua Achebe.

ANSWER: Federal Republic of Nigeria

9. One class of these entities is the Reissner-Nordstrom type, but the most common variety of these is the Kerr-Newman type. The Penrose process outlines a theoretical method for extracting energy from the ergospheres of these entities. They can only be described by their mass, charge, and angular momentum according to the "no hair" theorem, and spontaneous pair production releasing energy from these entities is called Hawking radiation. These objects occur above the Chandrasekhar limit, and the simplest metric describing them is the Schwarzschild radius. For 10 points, name these solar objects that are so massive that light cannot escape.

ANSWER: Black Holes

10. The background of this painting depicts a ship with a smokestack and a man in orange blowing a bugle. A blue passenger can be seen in a boat guided by four white-clad rowers on its left side, and this painting depicts a man in a tophat holding a cane staring out into the left. Other people depicted in this painting include a man with a red, sleeveless shirt smoking a pipe and a woman holding an umbrella with a monkey on a leash in its right foreground. For 10 points, name this painting depicting people relaxing by the Seine, a pointillist work of Georges Seurat.

ANSWER: A **Sunday Afternoon** on the Island of La Grande Jatte [or Un **dimanche après-midi** à l'Île de la Grande Jatte; accept equivalents translations]

11. This man created a one-party system under the Liberation Rally, and he gave military support to Abdal al-Sallal during the North Yemen Civil War. This man deposed Muhammad Naguib despite having earlier worked with him as part of the Free Officers Movement to overthrow King Farouk. This leader was a founding member and served as the second Chairman of the Non-Aligned Movement, and he was defeated during the Six-Day War. He oversaw construction of the Aswan High Dam, and he prompted an occupation of the Sinai Peninsula after nationalizing the Suez Canal. For 10 points, name this predecessor to Anwar Sadat as President of Egypt.

ANSWER: Gamal Abdel **Nasser** Hussein

12. This substance is reacted with table salt in both the LeBlanc and Mannheim processes. The company Haldor Topsoe developed this substance's namesake "wet" process for producing it. The first method of industrially producing this substance was proposed by John Roebuck, but it was later replaced by a process that uses a vanadium oxide catalyst and sees oleum added to water. Those processes are known as the lead-chamber and contact processes, respectively. For 10 points, name this substance, the acid found in car batteries, which has chemical formula H<sub>2</sub>SO<sub>4</sub>.

ANSWER: **Sulfuric Acid** [accept **H<sub>2</sub>SO<sub>4</sub>** before mentioned; prompt on "Oil of Vitriol"]

13. In 1985, limnologist J. Val Klump was the first person to reach the lowest depths of this body of water. The Porcupine Mountains Wilderness State Park, Pukaskwa National Park, and the Sleeping Giant formation all are found on its shores. Fed by the Pigeon, Brule, and Nipigon rivers, this body of water contains the Apostle islands, along with Isle Royale. Large cities on this lake's coast include Thunder Bay and Duluth, and the manmade Soo Locks on the St. Marys River separate the twin cities of Sault Ste. Marie. For 10 points, name this largest of the Great Lakes.

ANSWER: Lake **Superior**

14. High temperature polymorphs of this mineral include tridymite and cristobalite, and a denser polymorph of this mineral is coesite. One variety of this mineral exhibiting chatoyancy is called Tiger's Eye. Along with the presence of iridium, evidence for an asteroid impact causing the KT extinction comes from the abundance of the "shocked" variety of this mineral in the Cretaceous-Paleogene boundary layer. This mineral lies at the very bottom of Bowen's reaction series, and varieties of it include citrine and amethyst. For 10 points, name this mineral with a Moh's hardness scale value of seven.

ANSWER: **Quartz** [accept **Tridymite**, **Cristobalite**, or **Coesite** before mentioned; accept **Faujasite**, **Melanophlogite**, **Keatite**, **Moganite**, or **Seifertite** before "asteroid"; prompt on "Tiger's Eye," "amethyst," or "citrine" before mentioned; prompt on "silica"]

15. The protagonist of this work is pushed into a cesspool by the bully Wells, after which he is treated by Brother Michael. In this novel, Clongowes Wood College is headed by Father Dolan. After the protagonist of this novel gets involved with some prostitutes, he is briefly straightened out by three fiery messages about Hell given by the Latin teacher Father Arnall. Because the protagonist's father, Simon, continually wastes money, the protagonist is forced to go to Belvedere College, and later University College, where he meets his best friend Cranly. For 10 points, name this bildungsroman novel about Stephen Daedalus, written by James Joyce.

ANSWER: A **Portrait of the Artist as a Young Man**

16. This composer never finished his *Universe Symphony*. Another of this composer's works sees the flutes attempt to respond to the title action, which is being played by the trumpet. The second piano sonata by this composer of *The Unanswered Question* is divided into movements named "Emerson," "Hawthorne," "The Alcotts," and "Thoreau." This composer also wrote a work depicting "St. Gaudens," "Putnam's Camp," and "Housatonic at Stockbridge." For 10 points, name this American composer of *The Concord Sonata* and *Three Places in New England*.

ANSWER: Charles **Ives**

17. This website was the subject of a scandal involving obscene pictures of underage women under the watch of Michael Brutsch, who operated with the username violentacrez ("violent-acres"). This site was acquired by Condé Nast Publications in 2006, but it is now a subsidiary of Advance Publications. This website was founded by two University of Virginia students, Steve Huffman and Alexis Ohanian. Chris Hadfield answered questions on this website from the International Space Station, and members of this website gain karma and celebrate cakedays. For 10 points, name this social news website whose users upvote and downvote posts.

ANSWER: **Reddit**.com

18. The ChIP ("chip") process employs these units to locate DNA binding sites for a particular protein. The genes of these entities can reorganize in a process known as class switching, and one region located on these entities is known as the hypervariable region. These proteins are grouped into different isotypes based on which heavy chain they possess. A paratope specific to one particular epitope is located on two ends of these entities, and these entities can be classified as polyclonal or monoclonal. These proteins are secreted by B-lymphocytes. For 10 points, identify these y-shaped proteins that bind to antigens.

ANSWER: **Antibodies** [or **Immunoglobulins**; or **Antibody**]

19. In the case *INS v. Chadha*, one form of this action was ruled unconstitutional due to separation of powers. In the case *Clinton v. City of New York*, yet another form of this action was deemed unconstitutional because it violated the Presentment Clause. While its "one-house-legislative" and "line-item" varieties are no longer in place, executive inaction after congressional adjournment can still result in the "pocket" variety of this practice. In the United States, this practice can be overridden by a two-thirds majority in each house. For 10 points, name this practice of an executive officer refusing to sign a bill into law.

ANSWER: **Veto**es [accept specific forms]

20. One entity in this poem is described as being “the hand that mocked them and the heart that fed.” This poem ends by depicting “sands [that] stretch far away” from a “colossal wreck.” The speaker of this poem recounts how he “met a traveller from an antique land.” An entity in this poem is described as being “a shattered visage” with a “sneer of cold command.” The traveler in this poem tells the speaker that “two vast and trunkless legs of stone/stand in the desert.” The pedestal of the central statue of this poem reads “Look on my works, ye Mighty, and despair!” For 10 points, name this poem written by Percy Bysshe Shelley about a statue of Ramses II.

ANSWER: “Ozymandias”

TB. One side in this battle landed at Pevensey, and its first casualty was the Bard Taillefer, who recited the Song of Roland. The losing forces in this battle attempted to use a “shield defense” of Housecarls, and the commander of that side had earlier defeated his brother Tostig and Harold Hardrada at the Battle of Stamford Bridge. This battle predominantly took place on Senlac Hill, and it was prompted by the succession crisis resulting from the death of Edward the Confessor. For 10 points, name this 1066 battle depicted in the Bayeux Tapestry that saw the defeat of Harold Godwinson by William the Conqueror, resulting in the Norman rule of England.

ANSWER: Battle of Hastings

### Packet 13: Bonuses

1. Answer the following questions about everyone's favorite literary siblings, the Brontë sisters, for 10 points each.  
[10] This novel by Emily Brontë, which is narrated by Nelly Dean, sees Heathcliff angered when Catherine Earnshaw marries Edgar Linton.

ANSWER: Wuthering Heights

[10] This character in Charlotte Brontë's Jane Eyre commits suicide after setting fire to Thornfield Hall. This insane first wife of Edward Rochester had earlier been locked in an attic.

ANSWER: Bertha Mason [accept either underlined answer]

[10] Even though she initially believes Edward Weston is in love with Rosalie Murray, the title character of this Anne Brontë novel eventually marries him.

ANSWER: Agnes Grey

2. Mount Kosciuszko is the highest point on this nation's mainland, but its true highest point is in its territory of Heard Island. For 10 points each:

[10] Name this country with capital at Canberra.

ANSWER: Commonwealth of Australia

[10] This gulf indents into the northern part of Australia and is itself bordered to the north by the Arafura Sea. The Mitchell River flows from the Cape York Peninsula into this gulf.

ANSWER: Gulf of Carpentaria

[10] Fed by the Warburton River, this lake is the lowest point in Australia. Known to natives as Kati Thanda, its namesake basin includes Tirari Desert.

ANSWER: Kati Thanda-Lake Eyre

3. Answer the following about Cavalier poetry, for 10 points each.

[10] This poet behind "To Celia" and "On My First Sonne" is perhaps more famous for writing such plays as *Volpone* and *The Alchemist*.

ANSWER: Ben Jonson

[10] This poet included the line "Gather ye rosebuds while ye may" in his *carpe diem* poem "To the Virgins, To Make Much of Time," which he included in his collection *Hesperides*.

ANSWER: Robert Herrick

[10] This poet included the lines "I could not love thee (Dear) so much / Love'd I not honor more" in his poem "To Lucasta Going to the Warres." He is perhaps better known for asserting that "Stone walls do not a prison make, / Nor iron bars a cage" in his "To Althea, from Prison."

ANSWER: Richard Lovelace

4. His appointment of Jules de Polignac as Prime Minister was followed by an invasion of Algeria. For 10 points each:

[10] Name this monarch who took power after Louis XVIII and angered many after the passage of his July Ordinances. He was the last Bourbon on the French throne.

ANSWER: Charles X

[10] The July Ordinances sparked the July Revolution of 1830, which resulted in the abdication of Charles X and the subsequent election of this man. He was nicknamed the "Citizen King."

ANSWER: Louis Philippe I

[10] Louis Philippe was eventually forced to abdicate following the February Revolution in this year. This year also saw the March Revolution in Germany and an uprising against Hapsburg rule in Hungary led by Lajos Kossuth.

ANSWER: 1848

5. This movement is exemplified in Élisabeth-Louise Vigée-Le Brun's portraits of Marie Antoinette. For 10 points each:

[10] Name this art movement pioneered by the artist of *Embarkation for Cythera*, Jean-Antoine Watteau, known for its playful themes and ornate details.

ANSWER: Rococo

[10] This French Rococo painter of *A Young Girl Reading* depicted a young man hiding in some bushes watching an elderly man pushing a woman on the title conveyance in *The Swing*.

ANSWER: Jean-Honoré Fragonard

[10] This other French Rococo painter is known for his *The Toilet of Venus* as well as several portraits of Louis XV's mistress, Madame de Pompadour.

ANSWER: François Boucher

6. These reptiles are the bane of Dr. Jones. For 10 points each:

[10] Name this suborder of reptiles which includes sea kraits, anacondas, and pythons.

ANSWER: Snakes [or Serpentes]

[10] This protein-based compound is used by some snakes to incapacitate their prey. It can be classified into four basic groups: proteolytic, hemotoxic, neurotoxic, and cytotoxic.

ANSWER: Venom [Do not accept "poison"]

[10] This organ processes the scents picked up by a snake's tongue. Many animals detect pheromones with it.

ANSWER: Jacobson's Organ [or Vomeronasal Organ]

7. His second law states that the directed sum of the voltages around any closed network is equal to zero. For 10 points each:

[10] Name this man whose first law states that the sum of currents flowing into a junction equals the sum of the current flowing out of that junction.

ANSWER: Gustav Robert Kirchhoff

[10] This quantity is equal to the voltage across a conductor divided by the current going through it via Ohm's Law. This inverse of conductance is the measure of the opposition to current in an electrically conducting material.

ANSWER: Resistance

[10] This is the complex generalization of resistance, usually represented as a magnitude and phase angle. It is the extension of resistance to AC circuits.

ANSWER: Impedance

8. Anywhere this creature's hoof struck the earth, a spring burst forth. For 10 points each:

[10] Name this brother of Chrysaor and child of Medusa, a winged horse.

ANSWER: Pegasus

[10] Thanks to Athena, this man was able to mount and ride Pegasus into battle. Pegasus was necessary for him to be able to defeat the Chimera.

ANSWER: Bellerophon

[10] This Lycian king sent Bellerophon on the quest to kill the Chimera. His plan was to get Bellerophon killed without angering the gods by doing it himself.

ANSWER: Iobates

9. The protagonist of this novel is influenced by the philosophy of Harry Wotton, and he falls in love with Sibyl Vane. For 10 points each:

[10] Name this novel whose title character uses the same knife with which he had killed Basil Hallward to stab the title object, which had been aging in his place the whole time.

ANSWER: *The Picture of Dorian Gray*

[10] This Irish author wrote *The Picture of Dorian Gray* in addition to plays like *Lady Windermere's Fan* and *The Importance of Being Earnest*.

ANSWER: Oscar Wilde

[10] This long poem by Wilde detailing his time in prison for homosexual offenses claims that "outcasts always mourn" in addition to asserting that "each man kills the thing he loves."

ANSWER: "The Ballad of Reading Gaol" ("Gaol" sounds like "jail" but be lenient)

10. NOTE TO MODERATOR: DO NOT REVEAL THE ALTERNATE ANSWER TO THE FIRST PART OF THIS BONUS.

The logical possibility of philosophical zombies posited by David Chalmers supports this concept. For 10 points each:

[10] Name this philosophical concept that divides mental and material substances and argues for the distinction between mind and body.

ANSWER: Mind-Body Dualism [or Cartesian Dualism]

[10] The philosophy of dualism was primarily advanced by this French philosopher, who asserted that the body and soul were linked through the pineal gland. He also wrote "I think, therefore I am" in his *Discourse on Method*.

ANSWER: René Descartes

[10] This later philosopher critiqued dualism as the "ghost in the machine" in his *The Concept of Mind*. He also introduced the idea of "thick description" utilized by Geertz in his "Deep Play."

ANSWER: Gilbert Ryle



11. He included his parallel postulate and the Pythagorean Theorem in the first section of his most famous work. For 10 points each:

[10] Name this so-called "Father of Geometry," a Greek mathematician who included a multitude of proofs and postulates in his *Elements*.

ANSWER: Euclid of Alexandria

[10] In *Elements*, Euclid proved that there were infinitely many of these numbers. Later proofs were given by both Euler and Erdős, and two large numbers of this type are used in RSA encryption.

ANSWER: Prime numbers

[10] Euclid's algorithm, which is also found in *Elements*, finds these integers. Stein's algorithm also finds these integers.

ANSWER: Greatest Common Divisor [or Greatest Common Factor; or Highest Common Factor; or Greatest Common Measure]

12. This man employed the mathematicians Anthemius and Isidoros to construct the building with which he is associated. For 10 points each:

[10] Name this Byzantine emperor whose reign saw the establishment of a new law code and the construction of the Hagia Sophia.

ANSWER: Justinian I [or Justinian the Great; or Flavius Justinianus; or Petrus Sabbatius; prompt on "Justinian"]

[10] This general of Justinian, who exiled Pope Silverius, reconquered much of the Western Roman Empire from the Vandals and Goths.

ANSWER: Flavius Belisarius

[10] Belisarius helped to put down these revolts that occurred when an angry crowd of chariot racing fans stormed out of the Hippodrome and attempted to install Hypatius as the new emperor.

ANSWER: Nika Revolts/Riots/Uprising [accept clear-knowledge equivalents]

13. Céline Dion won this competition for Switzerland in 1988 with the song "Ne partez pas sans moi." For 10 points each:

[10] Name this annual music contest intended to foster peaceful competition among western nations. Its 2014 edition was won by Austria's Conchita Wurst with the song "Rise Like a Phoenix."

ANSWER: Eurovision Song Contest [prompt on "ESC" or "EuroSong"]

[10] This group gave Sweden its first Eurovision victory in 1974 with its song "Waterloo." This band's name is derived from the first letters of its members' first names, and its music was adapted into the musical *Mamma Mia!*

ANSWER: ABBA

[10] This Finnish group won the 2006 Eurovision contest with their song "Hard Rock Hallelujah," which appeared on their album *The Arockalypse*.

ANSWER: Lordi ("LORE-dee") [do NOT accept "Lorde" (sounds like "lord")]

14. It was based on Hedwig Lachmann's German translation of a play by Oscar Wilde. For 10 points each:

[10] Name this one-act opera containing the "Dance of the Seven Veils" whose final scene sees the title character kiss and declare her love to the severed head of John the Baptist.

ANSWER: Salome

[10] *Salome* was composed by this German of *An Alpine Symphony* who also included a notable C–G–C motif in his *Also Sprach Zarathustra*.

ANSWER: Richard Strauss

[10] This other Richard Strauss opera sees Octavian fall in love with Sophie and enlist the help of Marschallin to get rid of Ochs.

ANSWER: *Der Rosenkavalier* [or *The Knight of the Rose*]

15. This poem describes the world as "mud-luscious" and "puddle-wonderful." For 10 points each:

[10] Name this poem that describes a ridiculously sketchy "lame balloonman" that "whistles far and wee," thereby attracting the attention of "eddieandbill" and "bettyandisabel."

ANSWER: "in Just-"

[10] This poet of "Buffalo Bill's" and "i sing of Olaf glad and big" wrote "in Just-." He notably avoided the use of capital letters in his poems.

ANSWER: Edward Estlin Cummings

[10] This poem by Cummings describes the title place "with up so floating many bells down" and says that the title character "sang his didn't" and "danced his did."

ANSWER: "Anyone Lived in a Pretty How Town"

16. Name these behaviorists, for 10 points each.

[10] This man's "Kerplunk" experiment saw rats run into the walls of mazes. He also conditioned a child to fear white, fuzzy things in his "Little Albert" experiment.

ANSWER: John Watson

[10] This behaviorist behind such crazy inventions as the pigeon-guided missile and air crib is perhaps better-known for creating the operant conditioning chamber, which is sometimes referred to as his namesake "box."

ANSWER: Burrhus Frederic Skinner

[10] This man's experiments included putting cats in a box that could only be escaped when they pulled a lever, which led to his development of the Law of Effect.

ANSWER: Edward Thorndike

17. It saw the seizure of the Memphis and Charleston railroads. For 10 points each:

[10] Name this battle fought in Tennessee that saw Union troops under Ulysses S. Grant and Don Carlos Buell defeat the Confederate Army of Mississippi under P. G. T. Beauregard and another general.

ANSWER: Battle of Shiloh [or Battle of Pittsburg Landing]

[10] Shiloh also saw the death of a Confederate general with this last name, resulting in the highest-ranking casualty of the Civil War. Another general with this last name was injured in the Battle of Seven Pines while attempting to fend off the Union's Peninsular Campaign.

ANSWER: Johnston

[10] This incident occurring immediately after Shiloh saw the deaths of one hundred Union Soldiers under William T. Sherman and Thomas J. Wood during a cavalry charge led by Nathan Bedford Forrest.

ANSWER: Fallen Timbers incident

18. Name these concepts from computer science, for 10 points each.

[10] In Java, the single-line variety of these are done by using double forward slashes. In the multiline variety, everything between forward slash star and star forward slash will be ignored by the compiler.

ANSWER: **Comments**

[10] This term is generally first attributed to Admiral Grace Hopper removing a moth from a Mark II computer. Techniques for doing this include shotgun, printf, and rubber duck.

ANSWER: **Debugging**

[10] These are words that cannot be used for identifiers. FORTRAN does not have any of these. Examples of these words in Java are void, null, if, and true.

ANSWER: **Reserved**

19. Poland doesn't seem to do anything well, but this C-minor piano solo proves to be an exception. For 10 points each:

[10] Name this piece containing long descending runs played very quickly with the left hand. It was inspired by the 1831 Russian attack on Warsaw in the November Uprising.

ANSWER: **"Revolutionary Etude"** [or **"Etude Op. 10 No. 12"** or **"Etude on the Bombardment of Warsaw"**]

[10] This Polish composer of the "Minute Waltz" and the "Funeral March" sonata wrote the "Revolutionary Etude."

ANSWER: Frederic **Chopin**

[10] Chopin composed twenty-seven different works in this piano form, which are often paired with fugues. Debussy wrote one to the poem "The Afternoon of a Faun."

ANSWER: **Preludes**

20. Name these Canadian Prime Ministers, for 10 points each.

[10] This first Prime Minister formed the Great Coalition with his rival George Brown, and he lost his office for five years following the Pacific Scandal.

ANSWER: Sir John Alexander **MacDonald**

[10] This Prime Minister, who served from the mid-to-late 20th century, suppressed the Quebec sovereignty movement and established the Charter of Rights and Freedoms.

ANSWER: Pierre **Trudeau**

[10] This Prime Minister served four terms during the early 20th century, three of which were non-consecutive. Lord Byng refused this longest-serving Prime Minister's request to dissolve Parliament to call another election in 1926.

ANSWER: William Lyon Mackenzie **King**

TB. Their compound variety allow for the reduction of aberrations, and they come in concave and convex varieties. For 10 points each:

[10] Name these optical devices that converge or diverge light via refraction that are often found in glasses.

ANSWER: **Lenses**

[10] An ideal thin lens with two surfaces of equal curvature would neither converge nor diverge light, thereby having a value of zero for this quantity. This quantity, which is measured in dioptres, is equal to one over the focal length via the lensmaker's equation.

ANSWER: Optical **Power** [or Dioptric **Power**; or Refractive **Power**; or Focusing **Power**; or Convergence **Power**]

[10] This aberration sees beams parallel to but distant from the lens axis become focused in a different location than those beams close to the axis. It results in a blurring effect.

ANSWER: **Spherical** Aberration