1. Joel and the people of Nineveh did this to avert God's judgment, and accidental violations of it and time discrepancies due to altitude are pardoned during one of these in Bahá'í Faith lasting 19 days. A "regular" one happens two days a week in Charismatic Christian denominations, and Sikhism notes that it "brings no spiritual benefit to the person". Doing this causes one to gain taqwa in another religion, which acts a shield against Hell. Occurring from fajr to maghrib and regulated by Sawm in Islam, for 10 points, name this activity done during much of Ramadan.
ANSWER: **fast**ing [prompt on descriptions of the term; accept variations of the word]

2. In one poem, this poet compared a Caribbean sunset to "God having a hemorrhage." Another of this writer's poems ends "Beautiful, also, is the sun. / Beautiful, also, are the souls of my people." This poet wrote about a singer who "slept like a rock or a man that's dead" after "droning a drowsy syncopated tune, / Rocking back and forth to a mellow croon," in "The Weary Blues." His poetry collections include *Fine Clothes to the Jew* and *Shakespeare in Harlem*. For 10 points, name this author of *Montage of a Dream Deferred* and "The Negro Speaks of Rivers."
ANSWER: Langston **Hughes**

3. The fifth canto of this poem describes a symbolic battle between Dapperwit, Sir Fopling, Chloe, and Clarissa. Its fourth canto imagines Umbriel's visit to the "cave of Spleen." Its protagonist plays a game of ombre in its third canto, and is protected by sylphs like Ariel. Beginning "What mighty contests rise from trivial things," this poem ends with the title object becoming a constellation after being cut by the Baron. For 10 points, name this mock-heroic poem Belinda, whose hair is snipped without her consent, written by Alexander Pope.
ANSWER: "The **Rape of the Lock**"

4. Electrophoretic light scattering can be used to determine the optimal rate of flocculation in the zeta potential form of this process, and triethanolamine is applied to mask other substances prior to the addition of EDTA in the complexometric version of it. Trace amounts of water are analyzed in the Karl Fischer version of it, and the second derivative of its namesake curve can easily determine the equivalence point of this process. For 10 points, name this method of determining unknown concenentrations by slowly buretting a reagent into an indicator.
ANSWER: **titration**

5. In one of his books, Elicio and Erastro both fall in love with the title woman, *Galatea.* Another of his works consist of a series of short stories including "The Jealous Estremaduran" and "The Deceitful Marriage." In addition to the *Exemplary Novels*, he wrote a book in which Samson Carrasco is hired to bring back a character who rides Rocinante and employs Sancho Panza. For 10 points, name this Spanish novelist of *Don Quixote de la Mancha*.
ANSWER: Miguel de **Cervantes** Saavedra

6. The name for the decisive battle in this conflict was given by Cornelius Nepos, and that battle saw a charge by Prince Masinissa's cavalry. Hanno helped negotiate a peace at the end of this conflict, and Philip V of Macedonia participated in this conflict by attacking the Illyrian states. Gaius Nero defeated Hasdrubal at the Meauros River in this conflict, and this war saw Scipio Africanus defeat Hannibal at the Battle of Zama. For 10 points, name this conflict between Rome and Carthage that came between two other such conflicts.
ANSWER: **Second Punic** War

7. This author wrote about a man who throws away the unfinished manuscript for *London Pleasures* in one work, and he told of Fatty Bowling remembering Little Binfield in another. In addition to *Keep the Aspidistra Flying* and *Coming Up for Air*, he wrote a story in which Moulmein avoids the laughter of the colonized Burmese by "Shooting an Elephant." In another of his novels, one character repeatedly vows "I will work harder" but is eventually sold for glue after Napoleon usurps Snowball. For 10 points, name this author of *Animal Farm*.
ANSWER: George **Orwell** [or Eric Arthur **Blair**]

8. In one game, this character fights the sorcerer Agahnim, while in another he chases the skull kid into Termina where he restarts his adventure every three days. In another, he is shipwrecked on Koholint island, where he wakes the Wind fish. In one game he uses hover boots, which are needed to reach Bongo Bongo in the Shadow Temple, while he learns Saria's song before leaving his forest. A Hyrulean who often defeats Ganon and Ganondorf, for 10 points, name this namesake of an "Awakening" who plays the Ocarina of Time, the hero of the *Legend of Zelda* series.
ANSWER: **Link**

9. In the 1920s, he worked on an ad campaign for Johnson & Johnson baby powder and served as vice-president of the J. Walter Thompson advertising agency. Earlier in life, he studied a model of maze learning with Harvey Carr, and became head of the psychology department at Johns Hopkins. Together with Rosalie Rayner, he conducted an experiment in which a loud noise conditioned an infant to fear furry objects, including a white rat. For 10 points, name this proponent of behaviorism who conducted the Little Albert experiment.
ANSWER: John **Watson**

10. Works by this composer include the oratorio *Songs of Gurra* and the opera *From One Day to the Next*. The vocal style Sprechstimme is used in a work by this composer that is based on the poetry of Albert Giraud, and includes the movement "Monderstrunken." In addition to composing *Pierrot Lunaire*, this man developed a composition method involving tone rows that influenced Alban Berg and Anton Webern. For 10 points, name this Austrian composer who developed the twelve-tone technique.
ANSWER: Arnold **Schoenberg**

11. This man was the subject of the PBS documentary *Settin' the Woods on Fire*. He was succeeded as governor by his wife Lurleen, and he claimed that the only four letter words the students who protested against him didn't know were "soap" and "work." He ran on the American Independent Party's ticket for president, and he was shot in Laurel, Maryland by Arthur Bremer. For 10 points, name this man who, as governor, stood in front of the schoolhouse door at the University of Alabama in a symbolic gesture against integration.
ANSWER: George **Wallace**

12. In one story by this author, a man becomes lost in thick snow on his way to sell a grove, causing him to attempt to save the life of his servant Nikita. In addition to "Master and Man," this author wrote a story about Podznshev, who murders his wife after catching her in his house with a violinist, and a story about a magistrate served by Gerasim. This author of "The Kreutzer Sonata" and "The Death of Ivan Ilych" also wrote a historical novel about Pierre Bezukhov set during Napoleon's invasion of Russia. For 10 points, name this author of *War and Peace*.
ANSWER: Leo **Tolstoy** [or Lev Nikolayovich **Tolstoy**]

13. It was divided into nine banovine prefectures by king Alexander I, and the country that became this nation was the site of murders during a Skupstina session in 1928. The Magyars here were given autonomy in the Vojvodina province, and this country's third incarnation was the site of a NATO bombing campaign after an "ethnic cleansing" campaign occurred here. Falling apart into nations like Macedonia and Slovenia, for 10 points, name this defunct nation, once ruled by Josip Tito and Slobodan Milosevic, which was home to Serbs and Bosnians.
ANSWER: **Yugoslavia**

14. Under Nikolay Chkheidze, this group controlled Georgia until 1921. One of them, Alexandr Potresov, founded the newspaper *The Den*, and their leader was L. Martov. Their name came from a dispute regarding the control of the editorial board of the *Iskra* newspaper, and they resisted the idea of violent revolution in favor of reform through a democratic process. For 10 points, name this non-Leninist wing of the Russian Social Democratic Party that opposed the Bolsheviks.
ANSWER: **Mensheviks**

15. This structure can be defined by the parametric equations x equals cos t times the quantity A plus b cos one-half t, y equals sin t times the quantity A plus b cos one-half t, and z equals b sin one-half t. This structure can also be formed by cutting a Klein bottle in half; cutting this structure results in paradromic rings. This nonorientable surface has Euler characteristic zero. For 10 points, name this structure often formed by making a half-twist in a strip of paper and connecting the ends, which allows one to draw a single line encompassing both sides of that paper.
ANSWER: **Mobius** strip

16. In one work by this painter, two pitchers sit on a marble block and are flanked by two nude boys. A seated ape stares at a group of figures in another work painted by this man. He created a work in which an awkward goat is agape at a girl fixing her hair, as well as several paintings of harlequin families. He also showed a boy wearing a look similar to that of Frida Kahlo. *Madeleine* and *Boy with a Pipe* are from the Rose Period of, for 10 points, what painter, who also had a Blue Period and painted *Les Desmoiselles D'Avignon*?
ANSWER: Pablo Ruiz y **Picasso**

17. Di-hydroxy-acetone phosphate is an intermediate in this process which is isomerized to glyceraldehyde-3-phosphate. Its penultimate step sees the production of PEP catalyzed by an enolase. The activity of its first enzyme, hexokinase, is elevated in many cancers. A feedback loop with phosphofructokinase is formed in this pathway, and it is also known as the Embden-Meyerhoff pathway. For 10 points, identify this pathway which sees the conversion of glucose into two pyruvate molecules and also the production of two ATP molecules.
ANSWER: **glycolysis** [accept **Embden**-**Meyerhoff** pathway until mentioned]

18. This man lends his name to a "sea" of electrons of varying energy states, whose value is equal to chemical potential at absolute zero. He names a type of problem which involves the estimation of commonly observed entities. Along with Dirac, he names statistical distribution for a set of particles with half-integer spin that obey the Pauli Exclusion Principle which are contrasted with bosons. For 10 points, identify this Italian physicist who lends his name to an institute for high energy physics research located in Batavia, Illinois.
ANSWER: Enrico **Fermi**

19. This figure suggests the plan of having Thor dress like Freya to get back Mjolnir and he gave counsel to three different couples in his role as Rig, the father of mankind. This figure's possessions include the sword Hofud and the horse Gulltopp, and his teeth are made of pure gold. He is the son of nine virgins and requires less sleep than a bird, and he will sound the Gjallarhorn at the start of Ragnarok, where he will kill and be killed by Loki. For 10 points, name this Norse god who guards the rainbow bridge Bifrost.
ANSWER: **Heimdall**

20. One character in this work declares "death does not frighten me, open the gates of terror" after being told by two men in armor that he must pass through fire, water, air, and earth. Priests of Isis and Osiris aid the hero, who faints after being chased by a snake at the start of this opera, and wakes up to meet the birdcatcher Papageno. Tamino pursues Pamina with the aid of the title object, a gift from the Queen of the Night, in, for 10 points, what opera by Mozart about an enchanted musical instrument?
ANSWER: The ***Magic Flute*** [or Die ***Zauberflöte***]

21. The Pay-Khoy ridge forms an extension to the northern tip of this range, and the Mughalzhar Hills are a southern extension of this range. Perm, Orsk, and Orenburg are some of the industrial centers in it, and the Kama River collects water from much of its western slope. Its northernmost tip is Novaya Zemlya, and its highest peak is Mount Narodnaya. Located in west-central Russia, for 10 points, name this mountain range that forms the traditional border between Europe and Asia.
ANSWER: **Ural** Mountains

22. Dry ones are known as DSPEs, while weak ones have their constant of protolysis related to overall concentration in Ostwald's law of dilution. The classical Guldberg-Waage formula for their equilibrium constant was modified in a paper about the "strong" kind of them by Debye and Huckel that theorized the "activity coefficient." Exemplified by Na-plus in water, for 10 points, name these substances containing free ions that can conduct electricity.
ANSWER: **electrolyte**s

HSAPQ
High School Academic Pyramid Questions

1. Her early rule was spent on a civil war with the rival Joan, who was supported by Alfonso the Fifth of Portugal. For 10 points each:
[10] Name this queen who married Ferdinand the Second of Aragon to unite Spain and end the Reconquista against the Moors. Later, she sponsored Christopher Columbus.
ANSWER: Queen **Isabel**la of Castille [or **Isabella** the Catholic; or **Isabel** la Catolica]
[10] Queen Isabella the Catholic supported this man, her confessor. He organized the Inquisition in places like Seville and Cordoba, convinced that Marranos and Moriscos were a threat.
ANSWER: Tomas de **Torquemada**
[10] In this 1212 battle the Almohad Muhammad an-Nasir attempted to cut off the Christian forces of Alfonso the Eighth, who convincingly won, beginning the Reconquista.
ANSWER: the battle of Las **Navas de Tolosa** [or the battle of **Al-uqab**]

2. His son Mihinda brought Buddhism to Sri Lanka, and he built a series of stupas and rock edicts like the one at Sarnath. For 10 points each:
[10] Name this grandson of Candra Gupta who promulgated Buddhism all across the Mauryan Empire.
ANSWER: **Ashok**a or **Asok**a
[10] Asoka converted to Buddhism after his bloody conquest of this region that includes Orissa. Later rulers of it include the Eastern Gangas.
ANSWER: **Kalinga**
[10] Asoka's empire included much of this modern day nation that was led by Jawaharlal Nehru and his daughter Indira Gandhi.
ANSWER: **India** or **Bharat**

3. This play features a title character who is secure, unless Birnham Wood comes to Dunsinane. For 10 points each:
[10] Name this Shakespearean tragedy that sees the title character become King of Scotland.
ANSWER: *Macbeth*
[10] Macbeth ascends to power when his wife convinces him to murder this King of Scotland in his bed.
ANSWER: King **Duncan**
[10] This author of *Confessions of an English Opium Eater* wrote an early criticism of *Macbeth* about the "Knocking at the Gate," which brings the murderers back to humanity.
ANSWER: Thomas de **Quincey**

4. Name these Auguste Rodin sculptures, for 10 points each.
[10] Originally named *The Poet*, this Rodin masterpiece shows a seated man with his chin on his fist.
ANSWER: The ***Thinker*** [or *Le **Penseur***]
[10] Rodin's *Thinker* was meant to be placed contemplating this work that depicts a scene from Dante's *Divine Comedy*. It is an enormous set of double doors.
ANSWER: The ***Gates of Hell*** [or *La **Porte de l'Enfer***]
[10] Rodin also sculpted this scene of six dejected gentlemen from a French town with nooses around their necks.
ANSWER: The ***Burghers of Calais*** [or *Les **Bourgeois de Calais***]

5. This novel is generally attributed to We Cheng'en. For 10 points each:
[10] Name this novel about the travels of Zhu Bajie, Sha Wujing, and others.
ANSWER: ***Journey to the West*** [or ***Xiyouji***; or ***Hsiyu-chi***; Note to moderator: accept the following, but do not read it to the teams, because it would compromise the second part: ***Monkey***; or ***Adventures of the Monkey God***; or ***Adventures of Monkey***]
[10] The main character of *Journey to the West* is this "king," who was born out of a rock on Flower Fruit Mountain.
ANSWER: **Monkey** [accept **Monkey King**; or **Emperor of Monkeys**; or **Sun Wukong**]
[10] *Journey to the West* is one of the Four Classic Novels of this country; those novels also include *Outlaws of the Marsh* and *Dream of the Red Chamber*.
ANSWER: The People's Republic of **China** [accept **Jhongguo**; or **Zhongguo**; or **Chung kuo**]

6. For a weak acid, it is equal to the concentration of the conjugate base, times the hydrogen ion concentration, divided by the concentration of the acid. For 10 points each:
[10] Name this constant, the equilibrium constant for the namesake reaction.
ANSWER: acid **dissociation** constant [or **K_a**]
[10] This law states that in a closed system, K_a is indeed a constant.
ANSWER: law of **mass action**
[10] This other law states that if there is an equilibrium-disrupting change in the system, then the system will adjust to restore equilibrium.
ANSWER: **Le Chatelier**'s Law

7. It was one of the chief reasons for Nikita Kruschchev's fall from power. For 10 points each:
[10] Name this October 1962 event in which President Kennedy ordered a blockade to prevent Soviet shipments to the namesake island.
ANSWER: **Cuban Missile Crisis**
[10] During the Cuban Missile Crisis, this U.S. Ambassador to the U.N. and former "egghead" presidential candidate asked Valerian Zorin if the USSR had nuclear missiles in Cuba
ANSWER: Adlai **Stevenson**
[10] The Cuban Missile Crisis ended in part due to President Kennedy's secret promise to Krushchev to remove U.S. missiles from this country.
ANSWER: **Turkey**

8. French neoclassical painting is the best kind. For 10 points each:
[10] Women lament at the right while to the left a man holding three swords plans to distribute them to the title figures in this Jacques-Louis David painting.
ANSWER: ***Oath of the Horatii***
[10] *Madame Rivière* and *Napoleon on his Imperial Throne* are two neoclassical works by this student of David. However, his best known work, *La Grande Odalisque*, is more Romantic.
ANSWER: Jean Auguste Dominique **Ingres**
[10] Ingres and David both succeeded this other painter by a century and a half. He was a rival of Claude Lorrain and painted *Tancred and Erminia* and a noted *Rape of the Sabine Women*.
ANSWER: Nicholas **Poussin**

9. She has the head of a crocodile, the body of a leopard, and the rear of a hippopotamus. For 10 points each:
[10] Name this Egyptian demoness that will eat your heart if it is heavier than the feather of Ma'at.
ANSWER: **Ammut** [or **Ammit**; or **Ahemait**; or **Amam**; or **Ammemet**; prompt on **Eater of Hearts**; prompt on **Devourer**]
[10] This jackal-headed god weighs the heart of the deceased against the feather of Ma'at.
ANSWER: **Anubis** [or **Inpu**; or **Anupu**; or **Ienpw**]
[10] This ibis-headed scribe, the purported inventor of writing, records the results of the weighing of the deceased's heart and reports his findings to the other gods.
ANSWER: **Thoth** [or **Djehuty**; or **Dhwty**]

10. The title character is named Caroline Meeber. For 10 points each:
[10] Name this novel in which the title character has affairs with Charles Drouet and George Hurstwood, written by Theodore Dreiser.
ANSWER: ***Sister Carrie***
[10] This other Dreiser work tells of Clyde Griffiths's downfall after he allows the pregnant Roberta Alden to drown.
ANSWER: An ***American Tragedy***
[10] Dreiser was an outspoken critic of the execution of these two Italians, whose plight also inspired Maxwell Anderson's *Winterset* and Katherine Anne Porter's *The Never Ending Wrong*.
ANSWER: Ferdinando Nicola **Sacco** and Bartolomeo **Vanzetti**

11. The Aragon and Gallego rivers are among its tributaries. For 10 points each:
[10] Identify this river, which rises in the Cantabria Mountains and empties into the Mediterranean Sea.
ANSWER: **Ebro** River
[10] The Ebro River gives its name to this peninsula, which contains Spain and Portugal, and which is separated from France by the Pyrenees.
ANSWER: **Iberian** Peninsula
[10] The longest river on the Iberian Peninsula, it originates in the Albarracin Mountains, and empties into the Atlantic near Lisbon.
ANSWER: **Tagus** River [or **Tejo** River]

12. The Seebeck effect notes that one of these will develop if two conducting metals are held at different temperatures. For 10 points each:
[10] Give this term for a difference in electrical potential between two points.
ANSWER: **voltage** [or **electromotive force**; or **emf**]
[10] Maxwell indicated that voltage was equal to resistivity times current density in an early formulation of this law, which is used the most frequently in simple circuit analysis.
ANSWER: **Ohm's** Law
[10] This inverse of the Seebeck effect notes that an applied voltage will cause a temperature difference. It is widely used in micro-PCR.
ANSWER: **Peltier** effect

13. Name these glacial features, for 10 points each.
[10] Terminal, ground, and lateral are all types of these raised ridges of sediment that form on the edges around a glacier.
ANSWER: **moraine**s
[10] Alpine glaciers can form these bowl-shaped areas, which are often home to tarns when the glacier recedes and melts. When two of them form back-to-back, a ridge called an arête forms.
ANSWER: **cirque**s [or **corrie**s; or **cwm**s; or **comb**s]
[10] These braided streams of sediment are created when fluvial runoff occurs underneath a glacier.
ANSWER: **esker**s

14. He patented an "air crib", which he used to raise one of his daughters. For 10 points each:
[10] Name this Harvard psychologist who published such works as *Beyond Freedom and Dignity* and *Walden Two*.
ANSWER: Burrhus Frederick **Skinner**
[10] Skinner is a member of this school of psychological thought, whose other proponents included Edward Thorndike and John Watson.
ANSWER: **behaviorism**
[10] Skinner developed this technique, in which movements which come successively closer to the desired behavior are rewarded until the animal finally performs the desired action.
ANSWER: **shaping**

15. His interest in Indian mysticism is shown in his opera *Savitri*. For 10 points each:
[10] Name this composer of Egdon Heath, as well as a work that was given an eighth movement by Colin Matthews.
ANSWER: Gustavus Theodore von **Holst**
[10] That Holst work is this suite that begins with a 5/4 march entitled "Mars, Bringer of War" and six other movements depicting Jupiter and Venus, among others.
ANSWER: The ***Planets***
[10] This Holst work ends with a movement that quotes "Greensleeves" and "Dargason" and is a suite for strings written for a school Holst taught at.
ANSWER: ***Saint Paul's*** Suite

16. This poem is contained on the Nowell Codex. For 10 points each:
[10] Name this Old English epic poem about a Geat who wields the sword Hrunting.
ANSWER: **_Beowulf_**
[10] Beowulf fights and kills this monster who had been terrorizing the inhabitants of Heorot.
ANSWER: **Grendel**
[10] This son of Weohstan is the only warrior to accompany Beowulf in his fight against a dragon.
ANSWER: **Wiglaf**

17. A mismatch in this protein is the primary cause of rejection of transplanted organs. For 10 points each:
[10] Name this protein that presents both self and nonself antigens to T cells and comes in Class I and Class II varieties.
ANSWER: **MHC** [or **major histocompatibility complex**]
[10] Antigens presented by MHC Class II molecules bind to the CD4 surface protein on this kind of T cell, the primary target of HIV.
ANSWER: **helper** T cells [or T **helper** cells; or **effector** T cells; prompt on **CD4+** cells]
[10] In contrast, antigens presented by MHC Class I molecules are recognized by the CD8 surface protein on this kind of T cell, which can kill an antigen-presenting cell if necessary.
ANSWER: **cytotoxic** T cells [prompt on **killer** T cells; prompt on **CD8+** cells]

18. Its upper house consists of 242 seats, and is called the Hall of Councillors. For 10 points each:
[10] Identify this legislative branch of Japanese government.
ANSWER: **Diet** of Japan
[10] The Komeito party has joined a coalition with this largest Japanese party, which has been in control of the Diet almost continuously since 1955.
ANSWER: **Liberal Democratic** Party [or **LDP**; or **jiyu minshuto**; accept equivalents]
[10] This man was president of Japan from September 2007 until his sudden resignation in 2008. He served as the Chief Cabinet Secretary under Koizumi and was succeeded by Taro Aso.
ANSWER: Yasuo **Fukuda**

19. This man invented an air pump with his assistant, Robert Hooke. For 10 points each:
[10] Name this chemist, whose namesake gas law relates pressure and volume at constant temperature.
ANSWER: Robert **Boyle**
[10] Boyle's law is a special case of this law, which states that pv equals nRT.
ANSWER: the **ideal gas** law
[10] The ideal gas law was first stated by this man, who has a namesake equation that characterizes the phase transition between two phases of matter, along with Rudolf Clausius.
ANSWER: Benoit Paul Emile **Clapeyron**

20. This ruler revived the hermandad and was the mother of Queen Joanna the Mad. For 10 points each:
[10] Name this Spanish queen and wife of Ferdinand.
ANSWER: **Isabella** I
[10] Prior to marrying Ferdinand, Isabella was the queen of what Spanish kingdom that had previously been ruled Alfonso X and Peter the Cruel?
ANSWER: **Castile**
[10] Weakened by feuds between the Zegris and Abencerages, this last Moorish kingdom of Spain was conquered by Ferdinand and Isabella in 1492, thus completing the Reconquista.
ANSWER: **Granada**

21. During this novel's "overture," the narrator recalls the his childhood memories of Combray after tasting a tea-soaked madeleine. For 10 points each:
[10] Name this seven-part novel whose sections include *The Guermantes Way*, *Sodom and Gomorrah*, and *Time Regained*.
ANSWER: ***In Search of Lost Time*** [or ***Remembrance of Things Past***; or A ***La Recherche du Temps Perdu***]
[10] This author of *Jean Santeuil* spent the final years of his life in a cork-lined room writing *In Search of Lost Time*.
ANSWER: Marcel **Proust**
[10] The first section of *In Search of Lost Time* describes this Jewish socialite's infatuation with Odette de Crecy, and is named this man's "way."
ANSWER: Charles **Swann**