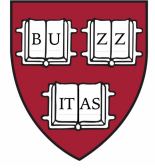


Harvard Fall Tournament X

Edited by Raynor Kuang and Robert Chu

Questions by Raynor Kuang, Robert Chu, Jason Park, Sriram Pendyala, Roger Jin, Erik Owen, Harrison Li, Mark Arildsen, Vimal Konduri, Adam Frim, and Jonah Phillion

And with thanks to Will Holub-Moorman, MIT Quiz Bowl, and various playtesters



Round 6

Tossups

1. **Description acceptable. One genus of organisms with this trait possess phyto-tel-mata that are crucial to the life cycles of some arthropods. Organisms with the “proto” variety of this trait lack their own digestive proteases, and some examples of this trait include (*) sticky trichomes used to capture prey. There are “bladder” and “lobster-pot” categories of this trait, and an organism with this trait has six trigger hairs that must be stimulated twice. Organisms with this trait include the bladderwort and pitcher plants. For 10 points, name this trait of certain plant species, exemplified by the Venus flytrap.**

ANSWER: **carnivorous plants** (prompt on partial answer; accept obvious equivalents like “plants that eat animals”; accept just **carnivorous** after “plant” is read; accept **pitfall** trap plants, **flypaper** trap plants, **snap** trap plants, **bladder** trap plants, and **lobster-pot** trap plants; prompt on just “plants”)

2. **The protagonist of this work wins a picture contest involving red and blue boxes by presenting a work he painted while exiled at Suma. In a chapter in this novel titled “Broom Tree,” several men meet on a rainy night and discuss the various types of women. After an orphan with the (*) same name as this novel’s author dies, the protagonist of this novel undergoes a depression and is implied to die in the blank chapter “Vanished Into the Clouds.” This novel’s title character has an affair with Lady Fujitsubo despite being married to the courtesan Lady Aoi. For 10 points, name this potentially first novel in the world, a Heian-era work by Lady Murasaki.**

ANSWER: *The Tale of Genji*

3. **The Spanish drama *Don Álvaro o la fuerza del sino* served as the basis for this composer’s opera “The Force of Destiny.” One of this man’s operas contains a chorus calling thought to fly “on wings of gold” and is titled in Italian as “Va, pensiero.” This composer’s (*) “Chorus of the Hebrew Slaves” appears in his opera *Nabucco*, and in another opera by this man the title character exclaims “La maledizione!” after hearing another character whistle an aria about “fickle women.” The Duke of Mantua sings “La Donna e Mobile” in an opera by this composer whose title character fears a curse. For 10 points, name this Italian who penned an opera about a jester in *Rigoletto*.**

ANSWER: Giuseppe Verdi

4. **The *HMS Pandora* was dispatched to end this event, and one man involved in this event later fathered a child named Thursday October. The target of this event would later become the governor of New South Wales, where he was deposed in the Rum Rebellion. This event began as a mission to trade for breadfruit in (*) Tahiti. It may have been caused by a punitive cut in rations and repeated floggings, and the perpetrators of this event settled on Pitcairn Island. For 10 points, name this event in which Fletcher Christian unlawfully replaced William Bligh as the captain of the namesake British ship.**

ANSWER: **mutiny on the HMS Bounty** (accept equivalents as long as they mention “mutiny” and “Bounty”; prompt on partial answer)

5. **One character in this book loses his family fortune when delays cause the ice in refrigerated train cars to melt, spoiling the vegetables inside. The pimp Mr. Edwards abuses Cathy Ames, who shoots her husband in the shoulder in this book and runs away. In this novel, the servant (*) Lee argues that “Thou mayest” is the correct translation of the Hebrew word *timshel*. This novel centers on the Trask family’s life in the Salinas Valley, and it implicitly compares the characters Caleb and Aron to Cain and Abel. For 10 points, name this John Steinbeck novel that takes its title from a Biblical location.**

ANSWER: *East of Eden*

6. **The Kolmogorov complexity describes the difficulty in performing this process. One method of doing this process uses a sliding window of references to previous data, while another uses a tree of prefixes based on occurrence frequency and improved on an earlier method by Shannon and Fano. Lempel and Ziv, as well as (*) Huffman, name methods of doing this process that might result in FLAC files. Artifacts may result from the lossy type of this process, which is exemplified by the conversion of images to JPEGs. ZIP files have undergone this process. For 10 points, name this process in which a file is decreased in size.**

ANSWER: compression (accept word forms; accept specific types like data compression or image compression; prompt on “encoding”) (Editor’s note: plus 100 imaginary points for “middle-out compression”)

7. **A lighthouse at modern day Boulogne-sur-Mer built during the reign of this man was used by his successor in later invasions. This man was accused of incest with his sister Julia Drusilla and he built a gigantic floating palace on Lake Nemi. After the death of his father (*) Germanicus and the imprisonment of his mother Agrippina the Elder, this man was adopted by his great-uncle Tiberius. Rumors of this man’s insanity include appointing Incitatus to a political role and claiming seashells as “spoils of the sea” from a invasion of Britain. For 10 points, name this insane Roman Emperor nicknamed “little boots” who planned to make his horse a consul.**

ANSWER: Caligula (accept Gaius Julius Caesar Augustus Germanicus)

8. **Strange measurements of this quantity in an Australian mineshaft led to speculation about a fifth fundamental force in the 1980s. This quantity has a power of negative one-half in the Planck mass, and it is multiplied by eight pi in the numerator of a fraction in the tensor form of (*) the Einstein field equations. This fundamental constant was measured using balls of lead and a torsion balance in an experiment by Henry Cavendish. This constant is about 6.67 times 10 to the negative 11 Newton meters squared over kilograms squared. For 10 points, name this physical constant that appears in an equation giving the force of attraction between two masses.**

ANSWER: universal gravitational constant (accept word forms; accept Newton’s constant before “Newton” is read; accept big G or uppercase G; prompt on G; do not accept “little g”; do not accept anything with “acceleration”)

9. **In one of these poems by this author the speaker describes three figures “in placid sandals” and “white robes” that include Ambition, Love, and Poesy. In addition to that poem on the subject of laziness, another of these poems by this author exclaims to a “dryad of the trees” that (*) “Thou wast not born for death” and asks “Do I wake or sleep?” The most famous of these poems by this author calls the title object an “Attic shape” and a “still unravish’d bride of quietness,” and declares “Beauty is truth, truth beauty.” For 10 points, name this group of poems by a single poet that includes ones “on Indolence,” “to a Nightingale,” and “on a Grecian Urn.”**

ANSWER: odes by John Keats (prompt on partial answer; accept John Keats’s “Great” Odes of 1819; anti-prompt [ask for less specific] on “Ode on Indolence”; or “Ode to a Nightingale”; or “Ode on a Grecian Urn”)

10. The first chapter of the *Paschalis Solemnitatis* officially concerns this period. The Te Deum is not sung during the Office of Readings during this period, nor is the Gloria or the Alleluia. This period begins on Clean Monday and is prefixed with the word (*) “Great” in the Orthodox Church, and religious icons are typically veiled during it. This period corresponds to an event in which a figure refused to turn stones to bread despite being tempted by the Devil, and in Western Christianity it begins on Ash Wednesday and ends with the Holy Week and Good Friday. For 10 points, name this 40 day period during which Catholics usually give something up.

ANSWER: Lent (or Lenten Season; or Great Lent)

11. The fourth movement of this work marked the first appearance of a contrabassoon in a symphony. An oboe cadenza interrupts the recapitulation of this symphony’s first movement, and this symphony ends triumphantly with 29 *C fortissimo* major chords. In this work’s *Allegro con brio* (*) first movement, the opening rhythm is played *fortissimo* starting on G, then again starting on F; that beginning to this symphony was later used to represent the “V for Victory” motif and is said to represent fate knocking at the door. For 10 points, name this symphony that opens with a famous “short-short-short-long” motif, written by Ludwig van Beethoven.

ANSWER: Ludwig van Beethoven’s Symphony No. 5 in C minor (need all three underlined parts until the first occurrence of the word “symphony”; need Beethoven and 5 until end, after which just 5 is okay; prompt on partial)

12. This event prevented Patrick Sawyer’s attendance at a conference in Calabar. Usage of ZMapp was criticized in response to this event, and Thomas Duncan died due to this event. In August 2014, soldiers fired on crowds in the West Point Slum in (*) Monrovia protesting indirectly due to this event. Rick Perry announced a state of emergency in response to the onset of this event in Dallas, and Emory University Hospital in Atlanta emerged as the American center for dealing with this event. For 10 points, name this event in which a highly virulent pathogen caused a 2014 epidemic in Guinea, Sierra Leone, and Liberia.

ANSWER: 2014 Ebola virus epidemic (accept mentioning Ebola, basically)

13. A character in one of this man’s works claims that love is descended from resource and poverty and describes the hierarchy of the forms of beauty, while another character in the same work claims humans were perfect circles that were cleaved in two. A man teaches a slave how to (*) square a circle in one of this thinker’s works, while yet another of his works contains the example of the Ring of Gyges and a discussion of a man who comes to realize there are forms beyond the shadows on the wall. For 10 points, name this philosopher who wrote the *Symposium*, *Meno*, and included the Allegory of the Cave in his *The Republic*.

ANSWER: Plato

14. Based on a figure who went mad after the death of his king Gwendelou and fled into the wood, Geoffrey of Monmouth created the first legends of this figure. As a boy called “Ambrosius,” this figure told Vortigern about red and white dragons fighting below a tower. This figure was the child of an incubus and a peasant, and this figure (*) disguised Uther Pendragon so he could woo Ygraine. This figure was trapped in a tree by the Lady of the Lake using his own powers, and this figure gave the prophecy that whoever drew the Sword in the Stone would be king of Britain. For 10 points, name this mentor of King Arthur, a great wizard.

ANSWER: Merlin

15. The Treaty of the Bogue was signed in the aftermath of one of these events, and before these events, one group of people was restricted to living in an area known as the Thirteen Factories. Before these conflicts began, a letter asking “Where is your conscience?” was sent to (*) Queen Victoria. The Self-Strengthening Movement resulted from these conflicts. After the first of these wars, five “treaty ports” were established and the island of Hong Kong was transferred from one side to the other. For 10 points, name this series of conflicts between Britain and China over the importation of the namesake addictive substance.

ANSWER: Opium Wars (or Anglo-Chinese Wars)

16. It doesn't involve a "demon," but this man proposed a problem involving mixing two chambers of gas that appears to violate the Second Law of Thermodynamics. One quantity named for this man is equal to surface area times surface tension, and he proposed a formula for the degrees of freedom in his (*) namesake phase rule. The change in one quantity named for this man is proportional to the natural log of the equilibrium constant, and is also equal to negative delta H minus T times delta S. A quantity named for this man determines whether a reaction is spontaneous. For 10 points, name this American scientist who names a type of "free energy."

ANSWER: Josiah Willard Gibbs (accept Gibbs paradox; accept Gibbs free energy; accept Gibbs phase rule)

17. One member of this profession is the video game character Balrog. Don King defrauded multiple members of this profession, and Daredevil's father was a member of this profession. Maggy Fitzgerald breaks her neck at the end of a movie about this profession, and (*) Evander Holyfield and Joe Frazier were members of this profession. In addition to *Million Dollar Baby*, movies about this profession contain the antagonists Ivan Drago and Apollo Creed as well as a character played by Sylvester Stallone. For 10 points, name this profession in which Floyd Mayweather Jr., Manny Pacquiao, and the fictional Rocky engage in.

ANSWER: boxers (accept word forms; accept pugilism and word forms; accept prizefighting and word forms; prompt on "fighting," I guess...)

18. A man present at one of these events had earlier leapt into the Potomac to save Priscilla Tirado; since then, notable attendees of these events have been called "Lenny Skutniks." The Second Bill of Rights was proposed during one of these events, which, from 1801 to 1912, were replaced by (*) written messages. They are mandated by Article II, Section 3 of the Constitution, and the designated survivor does not attend this event. The axis of evil, the Monroe Doctrine, and the Four Freedoms were all described at separate instances of these speeches. For 10 points, name these annual speeches to Congress given by the President.

ANSWER: State of the Union addresses (prompt on anything resembling "speeches to Congress" before mention)

19. This novel's narrator encounters two women knitting black yarn while applying to take over a job for the Danish Fresleven that had been recommended by his aunt. One character in this novel sees a painting of a woman holding a torch while waiting for a shipment of (*) rivets; that character also narrates the novel *Lord Jim*. The narrator of this novel reads a report stating "Exterminate all the brutes!" that was written by an employee of "The Company" who dies aboard a steamship saying, "The horror! The horror!" The ivory trader Kurtz is encountered by Marlow as he explores the Congo in this novel. For 10 points, name this novel by Joseph Conrad.

ANSWER: Heart of Darkness (do not accept "A Heart of Darkness" or "The Heart of Darkness")

20. A parody of one of this man's works made by Banksy shows a man wearing Union Jack boxers standing next to two overturned plastic chairs; that artwork by this man is said to depict a location in Mulry Square. A man sitting at a desk looks out the large window of a white, featureless building in this artist's (*) *Office in a Small City*. Two women converse in a Chinese restaurant in his *Chop Suey*, while his most famous work includes two coffee canisters, an advertisement for Phillies cigars, and shows a man in a fedora sitting next to a woman in a red dress. For 10 points, name this artist who depicted the patrons of a diner in *Nighthawks*.

ANSWER: Edward Hopper

21. **During the Middle Ages, the Banu Sabur Dynasty ruled a Taifa kingdom based in this city. The capture of this city was the “only success” of the Christian army during the Second Crusade, and this city was occupied by Napoleon’s forces during the (*) Peninsular War from 1804 to 1807. The Marquis de Pombal rebuilt this city after an event led to a tsunami from the Tagus River, and this city’s namesake treaty was signed in 2007 and amended the European Union’s constitution. For 10 points, name this site of a massive earthquake in 1755, the capital of Portugal.**

ANSWER: **Lisbon**

Bonuses

1. The gorilla Koko learned to use an American example of these languages. For 10 points each:

[10] Name this group of languages that uses hand gestures instead of sound and that is primarily used by the deaf.

ANSWER: **sign language** (accept word forms)

[10] The study of sign languages examines *cheremes* instead of these fundamental units of sound. These units typically make up morphemes.

ANSWER: **phonemes** (do not accept or prompt on just “phones”)

[10] A case study in the spontaneous development of language arose in this country after a group of deaf schoolchildren created a sign language that the linguist Judy Kegl termed ISN.

ANSWER: Republic of **Nicaragua**

2. A composer with this surname wrote *The Blue Danube Waltz*, which is used to accompany the movement of a satellite in the film *2001: A Space Odyssey*. For 10 points each:

[10] Give this surname of Johann. A Richard [“RICK-ard”] with this surname wrote *Also sprach Zarathustra*, which is also notably used in *2001*.

ANSWER: **Strauss** (accept Johann **Strauss** or Richard **Strauss**)

[10] This composer’s ragtime classic *The Entertainer* is used repeatedly through the con film *The Sting*. He also wrote the *Maple Leaf Rag*.

ANSWER: Scott **Joplin**

[10] This composer partially contributed to the soundtrack of the absolutely awful 2015 *Fantastic Four*. His better known (and better quality) film work includes *Koyaanisqatsi* and *The Hours*.

ANSWER: Philip **Glass**

3. Answer the following about turn of the century female journalists, for 10 points each:

[10] Ida Tarbell wrote a scathing history of this man’s Standard Oil Company. This man’s ownership of Standard Oil made him the richest man in American history.

ANSWER: John Davison **Rockefeller**, Sr.

[10] Another famous Ida was Ida B. Wells, best known for her exposes on this practice. This practice was the target of the Dyer Bill and the subject of the song “Strange Fruit.”

ANSWER: **lynching** (accept word forms; prompt on descriptions like “extrajudicial killings”)

[10] This journalist, who was not named Ida, pretended to be insane to write a exposé on mental asylums for Joseph Pulitzer’s *New York World* newspaper.

ANSWER: Nellie **Bly**

4. The integral form of this law equates the magnetic flux with the surface integral of the electric field. For 10 points each:

[10] Name this law named after a German scientist that gives the electric flux as the charge over the permittivity of free space. A similarly named law “for magnetism” says that the divergence of the magnetic field is zero.

ANSWER: **Gauss**’s Law

[10] Gauss’s Law and Gauss’s Law for magnetism are the first two of this set of equations named for a Scottish scientist. The next two laws in these equations are Faraday’s Law and Ampere’s Law.

ANSWER: **Maxwell** equations

[10] Maxwell cleaned up Ampere’s law by adding a term for this quantity representing the rate of change of the namesake type of electric field. It is symbolized capital J.

ANSWER: **displacement current** (prompt on just “current”)

5. This battle was preceded by eleven earlier battles, all near the same northern Italian river. For 10 points each:
[10] Name this battle, also known as the Twelfth Battle of the Isonzo. Luigi Cadorna was replaced as chief of staff after this disastrous defeat for the Italians.

ANSWER: Battle of **Caporetto** (accept Battle of **Kobarid**; accept Battle of **Karfreit**)

[10] Caporetto was a major victory for the Central Powers during this war, which started with the assassination of Archduke Franz Ferdinand.

ANSWER: **World War I** (accept equivalents; accept **Great War**)

[10] German victory at Caporetto was partially due to the use of these soldiers. These units used “infiltration tactics” to overwhelm enemy trenches, and their name in German roughly translates as “shock troops.”

ANSWER: **stormtroopers** (accept **Sturmtruppen**; accept **Stosstruppe**; prompt on synonyms of “shock troops” like “assault troops”)

6. In some ancient cultures, desperate times called for desperate measures. For 10 points each:

[10] This Mesoamerican culture performed a sacrifice at the peak of the New Fire ceremony, which was carried out every year to prevent the end of the world. They were later conquered by Hernan Cortez and his conquistadors.

ANSWER: **Aztec** (accept additional words like “empire” and “people”)

[10] Julius Caesar claimed that these Celtic people would fill gigantic wicker men with people and then burn them alive. These Celts were typically religious leaders, though they could hold other educated roles.

ANSWER: **Druids**

[10] Recent evidence has increased support that Carthaginians performed child sacrifice, often burying them in these locations. The word for these locations comes from a Biblical location where Canaanites burned children alive.

ANSWER: **tophets**

7. A relief containing four men who seem to be sitting in a theater box overlooks this sculpture. For 10 points each:

[10] Name this sculpture, which dramatizes a religious experience of the title saint. An angel holds a golden spear pointed toward the swooning titular saint.

ANSWER: **Ecstasy of Saint Teresa**

[10] This man sculpted the *Ecstasy of Saint Teresa*. Other notable works of his include *Apollo and Daphne* and a sneering *David*.

ANSWER: Gian Lorenzo **Bernini**

[10] The four men depicted in the relief are members of this Venetian family. Cardinal Federico of this family was the patron of the *Ecstasy* and is buried in the chapel containing it.

ANSWER: **Cornaro** (accept **Cornaro Chapel**)

8. They say Hollywood’s out of ideas, so answer some questions about when instead the books steal from Hollywood, for 10 points each:

[10] A prison inmate uses a poster of Rita Hayworth to hide his escape in this author’s *Rita Hayworth and Shawshank Redemption*. Nevertheless, it’s more frequent that books by this author like *The Shining* and *Misery* are made into movies.

ANSWER: Stephen (Edwin) **King**

[10] Walker Percy’s *The Moviegoer* is set in this Southern city. Ignatius J. Reilly goes on a series of misadventures in this city in *A Confederacy of Dunces*, and Blanche Dubois moves to this city in *A Streetcar Named Desire*.

ANSWER: **New Orleans**

[10] Rita Hayworth shows up again in this author’s *Betrayed by Rita Hayworth*. Two political prisoners tell each other movie plots to pass the time in this author’s *Kiss of the Spider Woman*.

ANSWER: Manuel **Puig**

9. West Coast Rap has had its moment with the *Straight Outta Compton* film, so let's talk about East Coast Rap. For 10 points each:

[10] This man rapped about "Dead Presidents" on *Reasonable Doubt* and about "99 Problems" on *The Black Album*. This Brooklyn-based rapper is married to Beyoncé.

ANSWER: **Jay Z** (or Shawn Corey **Carter**)

[10] This man appeared on *Reasonable Doubt*, in addition to releasing his own album *Ready to Die*. He was blamed for Tupac Shakur's death to a feud between the two, and was himself killed in a drive-by shooting six months later.

ANSWER: The **Notorious B.I.G.** (or Biggie **Smalls** or just **Biggie**; or Christopher George Latore **Wallace**)

[10] This man helped produce *Enter the Wu-Tang (36 Chambers)* as *de facto* head of the Wu Tang Clan. This rapper also directed the movie *The Man with the Iron Fists*.

ANSWER: **RZA** (or Robert Fitzgerald **Diggs**)

10. The main character in this book has a wild dream about a "stranger-god." For 10 points each:

[10] Name this book about Gustav von Aschenbach, who dies of cholera after visiting the title city and becoming obsessed with the young boy Tadzio.

ANSWER: ***Death in Venice***

[10] *Death in Venice* is a book by this German, who also wrote about Hans Castorp's stay at a sanatorium in *The Magic Mountain*.

ANSWER: Thomas **Mann**

[10] Mann wrote the story "The Clown," about a monotonously depressed clown, while this other German author wrote the novel *The Clown*. This author described a family of architects in *Billiards at Half-Past Nine*.

ANSWER: Heinrich **Böll**

11. Name some things related to British children's literature, for 10 points each:

[10] Lewis Carroll originally told the nucleus of this book to Henry Liddell's daughters. The title character follows a white rabbit and enjoys a nice tea party, though the Queen of Hearts ruins her fun.

ANSWER: ***Alice in Wonderland*** (or ***Alice's Adventures in Wonderland***)

[10] This author originally described a character named "Peter Pan" in his book *The Little White Bird*, but he later premiered a distinct play about "the Boy Who Wouldn't Grow Up."

ANSWER: J.M. **Barrie** (or Sir James Matthew **Barrie**, 1st Baronet)

[10] Hazel leads the protagonists of this book written from their former home to this book's title location, where they rescue the inhabitants of Efrafa and battle General Woundwort.

ANSWER: ***Watership Down*** (the book is by Richard Adams)

12. This meteorological measurement determines the mixing ratio at a given atmospheric pressure. For 10 points each:

[10] Name this temperature to which a parcel of air must be cooled at constant pressure in order to be saturated with water vapor.

ANSWER: **dew point** temperature

[10] For the dew point, this quantity averages about 1.8 degrees Celsius per kilometer of altitude. For air temperature, this quantity comes in "dry adiabatic" and "moist adiabatic" varieties.

ANSWER: **lapse rate**

[10] High temperature lapse rates along with significant vertical wind shear lead to these violently spinning columns of air associated with funnel clouds. The intensity of these phenomena is measured using the Enhanced Fujita Scale.

ANSWER: **tornadoes**

13. The God's Finger rock formation in the Serra dos Órgãos within this region forms the background of its state flag. For 10 points each:

[10] Name this state that is home to and takes its name from Brazil's second largest city.

ANSWER: **Rio de Janeiro**

[10] The Serra dos Órgãos is part of the larger Serra do Mar, which is bounded on the east by this abrupt geological formation that divides Brazil's highlands from its coastal regions.

ANSWER: **Great Escarpment**

[10] This landmark religious statue is located on Mount Corcovado in Rio. This statue and its iconic outspread arms were designed by Paul Landowski.

ANSWER: **Christ the Redeemer** (prompt on just "Christ")

14. The third Noble Truth provides for the existence of this state. For 10 points each:

[10] Name this Buddhist term for enlightenment that results from liberation from samsara and the cycle of rebirth.

ANSWER: **nirvana**

[10] This Indian philosopher quipped that there is no distinction whatsoever between samsara and nirvana. He is also known for saying that "form is emptiness; emptiness is form" in the *Heart Sutra*.

ANSWER: **Nagarjuna**

[10] Nagarjuna was an important figure in this school of Buddhism, which emphasizes the role of bodhisattvas. This movement's name roughly translates to "Great Vehicle," and it's contrasted with Theravada.

ANSWER: **Mahayana** Buddhism (anti-prompt [ask for less specific] on "Madhyamaka")

15. Answer the following about people messing with calendars, for 10 points each:

[10] A pope of this name reformed the Julian calendar in the papal bull *Inter gravissimas*. That calendar is still used across the world today.

ANSWER: **Gregory** (accept **Gregory XIII**; accept **Gregorian** calendar)

[10] This was the eleventh month of the French Republican calendar. It ran from mid-July to mid-August and also names a "reaction" that deposed Maximilien Robespierre.

ANSWER: **Thermidor** (accept **Thermidorian** Reaction)

[10] As president of this country, Sarparmurat Niyazov renamed April "*Gurbansoltan*" after his mother. Even more hilariously, bread was also renamed *Gurbansoltan* during Niyazov's rule in this country.

ANSWER: **Turkmenistan**

16. Before being made into a musical in 2015, Alison Bechdel's *Fun Home* was created in this format. For 10 points each:

[10] Name this medium of work that Art Spiegelman employed in his Holocaust memoir *Maus*.

ANSWER: **graphic novel** (prompt on "comic")

[10] A similar medium to the graphic novel, the comic book, was vitalized by the work of this Marvel artist, who co-created heroes like Spider-Man and the X-men with Jack Kirby and Steve Ditko.

ANSWER: Stan **Lee**

[10] On the other side of the planet, this prolific Japanese artist became known as the "father of manga" and the "father of anime" for his work in the 1950s on manga like *Astro Boy* and *Phoenix*.

ANSWER: Osamu **Tezuka**

17. A hashing attack can be developed based on this problem. For 10 points each:

[10] Name this problem that considers the probability that two people in a room will have the same one of the title dates. Counterintuitively, a nearly 100% chance is reached at 70 people, far before there are 365 people.

ANSWER: **birthday problem**

[10] The birthday problem can be explained by this principle. Fundamentally, this principle states if there are more than m items in n less than m containers, then at least one container must have more than one item.

ANSWER: **pigeonhole principle**

[10] This man formulated the pigeonhole principle. He names some boundary conditions, and his namesake function is discontinuous at every point.

ANSWER: Peter Gustav Lejeune **Dirichlet**

18. This author's novel *God Help the Child* came out in April 2015. For 10 points each:

[10] Name this American author who wrote about "Milkman" Dead III in *Song of Solomon* and the residents of the Bottom in *Sula*.

ANSWER: Toni **Morrison**

[10] Morrison also wrote this novel about Sethe, who kills her infant child to save it from a life of slavery and is subsequently haunted by the title ghost. This book's epigraph reads "Sixty Million and more" in reference to the slave trade.

ANSWER: **Beloved**

[10] In Morrison's novel *The Bluest Eye* this character wishes to be white and have blue eyes. After being sexually assaulted by her father, this character eventually goes insane and believes she gets her wish.

ANSWER: **Pecola Breedlove** (accept either or both names)

19. This division of the autonomic nervous system is primarily involved in the fight-or-flight response. For 10 points each:

[10] Name this system that regulates homeostasis and is activated by adrenaline. Stimulating this system will increase blood flow to skeletal muscles, inhibit digestion, and dilate the pupils, as contrasted with a different system that's more passive.

ANSWER: **sympathetic** nervous system

[10] This emotion can arise from the fight-or-flight response. Patient S.M. cannot feel this emotion because of irreversible damage to her amygdala.

ANSWER: **fear** (accept variants like **being scared**)

[10] Fear conditioning can induce this phenomenon linked to memory formation in the amygdala. This phrase refers to the strengthening of synapses in response to high-frequency stimulation.

ANSWER: **long term potentiation** (prompt on just "potentiation" or "LTP")

20. Greek heroes often had strained relationship with their daddies. For 10 points each:

[10] This future ruler of Thebes unknowingly murdered his father in a scuffle at a crossroads. He later killed himself after discovering he had also married his mother.

ANSWER: **Oedipus**

[10] Aegeus jumped into his self-named sea when this man forgot to raise white sails on his voyage home from Crete.

ANSWER: **Theseus**

[10] At Larissa, King Acrisius of Argos was slain by his son Perseus in this manner.

ANSWER: getting **hit** in the head by a **discus** (accept obvious equivalents)

21. This distribution is the maximum entropy probability distribution of a random variable if it has known finite support. For 10 points:

[10] Name this family of distributions, whose 'standard' type has variance one-twelfth and mean one-half. For any random variable X , the inverse CDF transform of X has this distribution.

ANSWER: **uniform distribution**

[10] Under the central limit theorem, the average of N standard uniform random variables should converge to a distribution named after this man. This mathematician is well-known for an apocryphal story where he summed 1 to 100 quickly.

ANSWER: Carl Friedrich **Gauss**

[10] This theorem in conditional probability theory, named for a Briton, relates the probability of A given B to the probability of B given A .

ANSWER: **Bayes theorem**