

FACTS

Edited by Ryan Golant, Jakob Myers, Clark Smith, and Shrayus Sortur

PACKET 06

Editors 2 (TJ + CSW)

TOSSUPS

1. A character from this poem was partially inspired by a similar character, Grip, from Dickens' *Barnaby Rudge*. This work's narrator hears "Seraphim whose foot-falls tinkled on the tufted floors" after the "air grew perfumed from an unseen cancer". The title character of this work, described as a "prophet" (*) and "a thing of evil", is asked, "Is there balm in Gilead?" That title figure of this work enters a room "with many flirt and flutter" before perching upon a bust of Pallas and proceeding to repeat "nevermore" to all questions asked of it. For 10 points, name this Edgar Allen Poe poem about an eponymous bird.

ANSWER: "The Raven"

2. An analogue of this structure found in fungi helps clog the cell to prevent leakage of the cytoplasm, and is named for Mikhail Woronin. A disease that affects this structure is caused by a mutation in the PHYH gene and causes buildup of phytanic acid. The excess of such fatty acids caused by the absence of this structure can be reduced with a mixture known as (*) Lorenzo's oil, which is used to treat sufferers of Zellweger Syndrome. Proteins named after this organelle transport the antifungal glucosinolate, and this organelle's main function is achieved through the activity of the enzyme catalase. For 10 points, name this organelle whose main task is the breakdown of H_2O_2 ["H-2-O-2"].

ANSWER : peroxisomes

3. In one of this man's poems, he states, "the devoted poet should stand erect in his values, but not necessarily in his little poems, which are truly witty and charming." After noting that "once our brief light sets, we must sleep an eternal night" he hastily commands his lover to give him (*) "a thousand kisses, then a hundred". He tells of speaking "in vain to silent actions" after bidding his brother "Hail and Farewell" in "Ave Atque Vale". He laments that "Now thanks to you, my girlfriend's little swollen eyes are red with weeping," in his eulogy of a pet sparrow. For 10 points, name this Latin poet who addressed numerous poems to Lesbia.

ANSWER: Catullus

4. The House of Flowers was built as a mausoleum for one former leader of this country. One faction of this country's World War II resistance movement, the royalist Chetniks, occasionally collaborated with the Government of National Salvation. This country's Partisans were led by a man who once sent a threatening letter to another world leader reading, "if you don't stop sending killers (*), I'll send one to Moscow." This country, the only European founding member of the Non-Aligned Movement, was expelled from the Cominform after a postwar split with the Soviet Union. Josip Broz Tito led, for 10 points, what former country that comprised most modern-day countries in the Balkan peninsula?

ANSWER: Yugoslavia

5. *NOTE TO MODERATOR: read notes in the first line slowly. Pause at the slash. Read Bb as “B flat” and C# as “C sharp”.* **In one work of this type, the notes “A / A-F-Bb-C#” introduce the subject of the second movement double fugue. “Anthem for Doomed Youth” is quoted in a composition of this type by Benjamin Britten that premiered at Coventry. Faure’s work in this genre substitutes Pie Jesu [PEE-ay YAY-sue] for the traditional (*) Dies [DEE-ays] Irae sequence.** A setting of Matthew 5:4 opens a non-liturgical “German” work in this genre by Brahms. Count von Walsegg commissioned a work of this type that was completed by Franz von Sussmayr upon the original composer’s death. For 10 points, name this “mass for the dead”, including an unfinished D minor one by Mozart.

ANSWER: requiem mass [prompt on “mass for the dead” before mentioned; do not accept or prompt on “mass”]

6. **In projective geometry, two lines with this property intersect at the line at infinity. Playfair’s axiom guarantees that at most one line through a given point satisfies this property with reference to a given line. Crossing two vectors with this property gives the (*) zero vector, and modifying this property is the basis of non-Euclidean geometry.** Euclid’s fifth postulate, which is named for this property, implies that, since rectangles have sides that exhibit this property, all their angles are right angles. For 10 points, name this property possessed by two lines in the same plane that do not intersect.

ANSWER: parallel

7. **The protagonist of this play explains that she she was turned out by her sixth stepmother before exclaiming “I’m a good girl, I am.” The mother of one character shouts “Men! Men! Men!” after her son acts rudely to another character. That other character has a signature cry of (*) “Ah-ah-ah-ow-ow-oo” and falls for Freddy Hill, who loves her creation of “a new small talk”.** A chimney-sweep named Alfred in this play agrees to sell his daughter for 50 pounds, prompting a Sanskrit scholar to inquire, “Have you no morals, man?” Colonel Pickering and Henry Higgins endeavour to make a lady out of Eliza Doolittle in, for 10 points, what play by George Bernard Shaw?

ANSWER: Pygmalion

8. **In one passage. this philosopher taught that matter, feelings, and perceptions are not-self, or *anat-ta*. This thinker listed the five senses and mind as “on fire” in a speech opening “all is burning.” This man, who called himself *Ta-tha-ga-ta*, wordlessly transmitted wisdom to a follower while holding up a white (*) flower.** This thinker often spoke at Vulture Peak and at Sarnath’s Deer Park, where he taught to avoid both self-indulgence and asceticism in favor of a “Middle Way.” He delivered the Fire Sermon and Flower Sermon, and explicated the Four Noble Truths. For 10 points, name this man who was sitting beneath a bodhi tree when he achieved nirvana.

ANSWER: Buddha [accept either underlined portion of Siddhartha Gautama; accept Sakyamuni Buddha] (*Clues are from the *A-nat-ta-lak-kha-na* Sut-ta, Fire Sermon, Flower Sermon, and his “First Sermon”*)

9. **In this novel, the Chief Surgeon attempts to convince the main character to sign an agreement renouncing his previous beliefs. In another scene, the corpse of one adulterous Professor in this novel is moved to a tombstone marked “A return after long wanderings.” A painter in this novel declares “war on kitsch” (*) before being photographed while wearing nothing but a bowler hat.** Another character claims that his erotic adventures do not change his love towards his wife Sabina. For 10 points, name this Czech novel about four intellectuals including Tomas set during and after the Prague Spring, written by Milan Kundera.

ANSWER: *The Unbearable Lightness of Being*

10. According to Kandinsky's color theory, this color represents an absolute absence of movement. This is the sole color of the background wall in Raphael's *Portrait of Pope Julius II* and the color of the robe worn by St. John the Baptist in the Ghent Altarpiece. It's not black, but in John Singleton Copley's *Portrait of Paul Revere*, this is the color of the titular figure's (*) vest. In *I and the Village*, the man in the right foreground has a face of this color, which is also the color of the wife's dress in *The Arnolfini Wedding*. Magritte obscured the central figure's face in his *The Son of Man* with an apple of this color. For 10 points, name this color, the opposite of red on a color wheel.

ANSWER: green

11. The possibility of compensation for failing to meet another definition of this condition constitutes its Kaldor-Hicks variety. The increase in demand resulting from better meeting this condition creates a rebound effect which is the subject of the Jevons paradox. Though no points beneath the curve will, points on the production possibilities frontier will meet this condition. When supply does (*) not equal demand, it will not be met, creating deadweight loss. Pareto names a variety of it that is always met in a market in competitive equilibrium in which no one can be made better without making another individual worse off. For 10 points, name this condition whose thermal counterpart for a single vehicle is called fuel economy and is measured in miles per gallon.

ANSWER: economic efficiency [accept allocative efficiency or productive efficiency; accept Pareto efficiency or Pareto optimality; accept fuel efficiency and prompt on fuel economy before mention; accept word forms like efficient; do not accept "inefficiency" except in the rare case that someone is trying to describe something being not inefficient]

12. Facilitated transport via these systems has been suspected for the long range movement of plutonium on the Nevada Nuclear Test Site. When heavy metals or radionuclides form pure phase versions of these systems, they are known as "eigen [these systems]". Particle agglomeration, as described by the Schulze-Hardy rule, leads to the destabilization of these systems, which can subsequently be stabilized through (*) peptization.

These systems often appear blue due to the scattering of light in the Tyndall effect. Types of these systems include emulsions and aerosols, and common examples include milk and fog. For 10 points, name these mixtures in which one substance of microscopic particles is suspended in another substance.

ANSWER : colloids [or colloidal suspensions; prompt on "mixtures" or "suspensions"; do not accept or prompt on "solutions"]

13. Two rival companies in this industry allegedly backed the two sides of the 1930s Chaco War. Charles Pratt was an early founder of a company in this industry, which was responsible for the 1979 Ixtoc disaster. Thomas J. Walsh led an investigation into this industry that implicated Edward Doheny, and Operation Ajax was launched by the U.S. in response to the (*) nationalization of this industry in one country. A scandal in this industry involved the leasing of the Elk Hills; that incident was the Teapot Dome Scandal. Muckraker Ida Tarbell attacked the business practices of one company in--for 10 points--what industry over which John D. Rockefeller once held a monopoly?

ANSWER: oil industry [accept petroleum]

14. This country is home to a fortress city whose gateway is carved in the shape of a lion's paws; that city is Sigiriya. This country's highest peak is known as either Adam's Peak or Sri Pada by different religious groups. This country is home to the (*) Temple of the Tooth, and the Mannar Bank lies off its coast. Although Kotte is not this country's de facto capital, it remains its official capital. In the time of the British Raj, this country was referred to by the name of 'Ceylon'. This country is separated from India by the Palk Strait. For 10 points, name this country, whose commercial capital is Colombo.

ANSWER: Sri Lanka [accept Ceylon before mention]

15. In 2008, this company announced that it would be shutting down its divisional brand, Ted, under the direction of Glenn Tilton. This company, which was depicted throwing guitars in a 2009 viral video by Dave Carroll, licensed *Rhapsody in Blue* as its theme song in 1976, and in March 2017, PRWeek dubbed this company's CEO, Oscar (*) Munoz, as "Communicator of the Year". In April 2017, this company suffered over \$1 billion in losses due to public backlash over an incident at O'Hare International Airport, which ended with David Dao being dragged off a plane. For 10 points, name this airline whose slogan is "fly the friendly skies".

ANSWER: United Airlines, Inc.

16. This tsar's ascent to the throne was met with challenges from Karl Philippe of Sweden, and the son of False Dmitry II. This tsar signed the treaty of Stolbova with Sweden, which gave him the city of Novgorod, and also signed the peace of Deulino with Poland-Lithuania. This man appointed his father, Philaret, as patriarch. (*) This man was succeeded by his son, Alexei, the same day that he pardoned all the criminals in Moscow and died peacefully in his sleep. For 10 points, name this Russian tsar, who ascended to the throne during the time of troubles and founded the Romanov dynasty.

ANSWER: Michael I Romanov

17. This man's transition away from the post-bop of tracks like "Nefertiti" was marked by the use of electric pianos and other unusual instrumentation on an album which included tracks like "Pharaoh's Dance" and "John McLaughlin". An adaptation of Rodrigo's *Concierto de Aranjuez* opens a collaboration between this musician and Gil Evans titled (*) *Sketches of Spain*. This man and Bill Evans disputed the composition of the jazz standard "Blue in Green", which this man included on an album created with a sextet featuring Cannonball Adderley and John Coltrane. For 10 points, name this jazz trumpeter who recorded such tracks as "So What" on his album *Kind of Blue*.

ANSWER: Miles Dewey Davis III

18. This man once lived in a cave he named for Lenin, on a mountain he named for Marx. At one battle, an organization led by this man captured a fortress with eleven outposts each named for women its commandant had slept with. This man tried to present an eight-point petition(*) to delegates during the Versailles conference, which prompted no response from the delegates. The emperor Bao Dai abdicated in favor of this man's revolution, and one of his generals, Vo Nguyen Giap, decisively defeated the forces of the French at the battle of Dien Bien Phu. For 10 points, name this man who founded the Indochinese communist party in Vietnam.

Answer: Ho Chi Minh [accept Nguyen Sinh Cung, Nguyen Tat Thanh, or Nguyen Ai Quoc]

19. Though it's not voltage, this quantity can be found using the method of image charges, and this quantity crossed with the H field gives the energy flux vector, also called the Poynting vector. In electrostatics, the energy per unit volume stored in this quantity equals one half times permittivity times the magnitude of this quantity squared, and this quantity equals the negative gradient of (*) potential. Faraday's law states that this vector quantity is produced by a change in magnetic flux, while Gauss' law gives the divergence of this quantity as rho divided by epsilon-naught. This quantity is zero inside a conductor. For 10 points, give this quantity, the force per unit charge at every point in space due to Coulombic forces, symbolized E.

ANSWER: electric field [accept E-field before the end]

20. **Though the other four essays concern Delphi, the religious practices of this place are the subject of the first essay in volume 5 of the *Moralia* of Plutarch. It is named for a king who lost all but one of his fifty sons to the Danaids. The syncretic Ser·apis was mainly worshipped here. In animal form, the gods flee to this region from Typhon, whom Plutarch equates with its antagonistic (*) storm god. Menelaus wrestles the “Old Man of the Sea” Proteus in this region, home to a goddess of magic with a mystery cult in Roman times who re- assembled her husband’s cut up body. For 10 points, name this home of the river god Nilus, whose native deities included Isis.**
ANSWER: Egypt [or Aegyptus]

BONUSES

1. The metopes of this structure include scenes of the the Gigantomachy and the Amazonomachy. For 10 points each:

[10] Name this temple dedicated to Athena that sits atop the Acropolis.

ANSWER: the **Parthenon**

[10] This collection of sculptures and friezes was taken from the Parthenon by its namesake nobleman and is currently housed in the British Museum.

ANSWER: **Elgin Marbles**

[10] The Elgin Marbles and other friezes that decorate the Parthenon were sculpted by this Greek artist. A lost statue of Zeus by this man was one of the Seven Wonders of the Ancient World.

ANSWER: **Phidias** [or **Pheidias**]

2. These compounds prevent cell division, and are commonly used against meningitis, scarlet fever, and streptococcal infections. For 10 points each:

[10] Name these antibiotic compounds that were discovered on accident by Alexander Fleming.

ANSWER: **Penicillins** [or **PCN**, or **pen**; anti prompt on “ampicillin”]

[10] Penicillins operate by inhibiting cross linkages within this structure. In bacteria, this structure is comprised of peptidoglycan.

ANSWER: bacterial **cell wall**

[10] In bacteria, this enzyme degrades penicillin by hydrolyzing its namesake structure, a four-atom ring. Penicillinase is one example of this broader enzyme class.

ANSWER: **β -lactamase** [or **beta-lactamase**; do not accept “ β -lactam” or “beta-lactam”]

3. Michael Oakeshott, a member of this philosophical tradition, identified six indicative characteristics to it, including “to prefer the familiar to the unknown” and to prefer “present laughter to utopian bliss.” For 10 points each:

[10] Name this movement exemplified in extreme form by Joseph de Maistre. Another thinker from this tradition who wrote *Reflections on the Revolution in France* was Edmund Burke.

ANSWER: **conservatism** [or word forms; prompt on “monarchism” due to the Maistre clue; accept more specific answers like **neoconservatism** or **Whiggism**]

[10] Russell Kirk wrote an influential book titled for *The Conservative* [this thing]. Conservatives latched on to an Allan Bloom book which argues that relativistic thinking’s “openness” actually leads to *The Closing of the American* [one of these things].

ANSWER: **mind** [accept *The Conservative Mind*; accept *The Closing of the American Mind*; do not prompt on putative synonyms such as “brain” since those are very philosophical different to everyone but the Churchlands]

[10] Modern libertarianism, which many modern conservatives align with contra Russell Kirk, is heavily influenced by the Objectivism of this novelist who wrote *Atlas Shrugged*.

ANSWER: Ayn **Rand**

4. Everyone loves presents, especially writers. For 10 points each, answer the following about gifts:

[10] An ironic twist typical of this author is found at the end of his story about Della selling her hair to buy Jim a watch chain in his “The Gift of the Magi.”

ANSWER: O. **Henry** [or William Sydney **Porter**]

[10] In the *Emma*, this is the gift given to Jane Fairfax. Everyone suspected that Colonel Campbell was the gifter.

ANSWER: **pianoforte** [prompt on “instrument”]

[10] This Frost poem opens “The land was ours before we were the land’s”. He read it as a gift for JFK’s

inauguration.

ANSWER: “The **Gift Outright**”

5. This character is trapped under a mountain for peeing on the Buddha’s fingers. For 10 points each:

[10] Name this disciple of Tripitaka who knows 72 transformations. A magic ring around his head gives him headaches when Tripitaka chants a certain mantra.

ANSWER: **Sun Wukong** [accept **Monkey** or **Monkey King**]

[10] Sun Wukong appears in this book by Wu Cheng’en, in which Tripitaka and his followers travel to India to retrieve the True Scriptures.

ANSWER: **Journey to the West** [or Xīyóujì]

[10] This fruit “in a Golden Vase” names a 17th century Chinese novel focusing on Ximen Qing and the antics of his devious wife, Pan Jinlian. Along with pine and bamboo, the tree of this fruit is known as one of the “Three Friends of Winter” in Chinese culture, because it blossoms brightly in the wintertime.

ANSWER: **plum** [accept **mei**]

6. Some empires that have more water than land. For 10 points each, name these thalassocracies.

[10] This empire was the traditional enemy of the Romans, who destroyed them and may have sown their fields with salt in the third Punic War.

Answer: **Carthage**

[10] Carthage was founded as a dependency of Tyre, both of which were part of this seafaring civilization. Greek letters are derived from this civilization’s namesake alphabet.

Answer: **Phoenician** civilization [or **Phoenicia**; or **Phoenicians**]

[10] This Indian empire, ruled by kings such as Raja Raja and Rajendra, established control over much of maritime Southeast Asia in the early 11th century. It was part of a trio of kingdoms with the Chera and the Pandya.

Answer: **Chola** Empire

7. Answer the following about the “princess and dragon” motif, for 10 points each:

[10] The earliest known instance of the motif sees this hero save the princess Andromeda from the sea monster Cetus.

ANSWER: **Perseus**

[10] This hero saves a princess named Sabra, Aia, or Cleodolinda, though she is anonymous in the *Golden Legend*. This patron saint of England slays the dragon when the inhabitants of Silene promise to convert and be baptized.

ANSWER: Saint **George** of Lydda

[10] Bogatyrs kill dragons called *Zmey* [zMAY] in this people’s folklore, but rarely stay with the princesses they save.

ANSWER: (East) **Slavs** [or **Russians** or **Ukrainians** or any other **Slavic** group; accept word forms]

8. Gerald Kaufman labelled this party’s 1984 manifesto “the longest suicide note in history”. For 10 points each:

[10] Name this British center-left political party that rivals the Conservatives. This party’s former prime ministers include Tony Blair and Gordon Brown.

ANSWER: **Labour** Party

[10] The Labour party formed a majority government in 1945 under this prime minister who succeeded Winston Churchill.

ANSWER: Clement **Attlee**

[10] Attlee remains one of modern Britain’s most popular prime ministers due to his creation of the National Health Service, which was advocated for in this 1942 report on the “great evils” of British society.

ANSWER: **Beveridge** Report

9. A work titled for this figure sees him fall in love with Mary Magdalene before returning to his home in Nazareth. For 10 points each:

[10] Name this man whose “Last Temptation” is the subject of a controversial book by Nikos Kazantzakis.

ANSWER: **Jesus Christ** [accept either underlined answer]

[10] This author described Simón’s efforts to find David’s mother in *The Childhood of Jesus*, whose sequel is *The Schooldays of Jesus*.

ANSWER: Joseph Maxwell **Coetzee**

[10] Apart from Jesus, this other Biblical figure is often referenced in literature. Archibald MacLeish wrote a modern retelling of his story, in which three Comforters attempt to explain his misfortune before he encounters Zuss and Nickels.

ANSWER: **Job**

10. Answer the following about classical music for children, for 10 points each:

[10] Benjamin Britten’s *The Young Person’s Guide to the Orchestra* is structured as a set of variations on the Rondeau from this other English composer’s incidental music to *Abdelazer*.

ANSWER: Henry **Purcell**

[10] This composer included “Doctor Gradus ad Parnassum” and “Golliwogg’s Cakewalk” in *Children’s Corner*, a suite dedicated to his daughter Emma. The third movement of this man’s *Suite Bergamasque* is “Clair de lune”.

ANSWER: Achille-Claude **Debussy**

[10] Georges Bizet’s suite *Jeux d’enfants*, or “Children’s Games”, is written for this combination of performers. This combination is different from a *piano duo*, which is when two musicians play on separate instruments.

ANSWER: piano **four hands** [accept reasonable answers mentioning **four hands**; prompt on answers involving two people playing on the same piano]

11. The boundaries of these objects are defined by an event horizon, and they lose mass through the emission of Hawking radiation. For 10 points each:

[10] Name these extremely dense regions of space that prevent all matter and radiation from escaping.

ANSWER: **black holes**

[10] When black holes merge, they expel these ripples in the fabric of spacetime that were first detected by LIGO. The 2017 Nobel Prize in Physics was awarded to Rainer Weiss, Kip Thorne, and Barry Barish for their detection of these entities.

ANSWER: **gravitational waves**

[10] LIGO provided some experimental evidence consistent with this postulate, which states that a black hole can be completely characterized by its charge, mass, and angular momentum.

ANSWER: **no-hair** theorem [or **no-hair** conjecture]

12. This metaphysical poet wrote of “virtuous men passing mildly by” in *A Valediction: Forbidding Mourning*. For 10 points each:

[10] This author is well-known for his erotic love poems, like *The Flea* and *To His Mistress Going to Bed*.

ANSWER: John **Donne**

[10] Donne declares that this figure is “slave to fate, chance, kings, and desperate men” after exclaiming “canst thou kill me”. One of Donne’s poems advises this figure to “be not proud”.

ANSWER: **Death**

[10] This Donne poem addresses the title entity by saying “Shine here to us, and thou art everywhere; This bed thy center is, these walls, thy sphere”. This poem also calls the title entity a “saucy pedantic wretch.”

ANSWER: *The* **Sun Rising**

13. This text is sometimes split into seven petitions and a doxology. For 10 points each:

[10] Name this text whose doxology reads “For thine is the kingdom, and the power, and the glory, for ever. Amen.” It earlier asks “give us this day our daily bread.”

ANSWER: The **Lord’s Prayer** [or the **“Our Father”** or **paternoster**]

[10] This prayer written by Reinhold Niebuhr asks, “God, grant me” the title concept “to accept the things I cannot change, courage to change the things I can, and the wisdom to know the difference.” It is often used in twelve-step programs like Alcoholics Anonymous.

ANSWER: (**Serenity** Prayer

[10] This figure gave a prayer starting “My soul doth magnify the Lord,” now called the “Magnificat.” She is “hailed” in a prayer which misemploys John 1:14 to call her “full of grace.”

ANSWER: **Mary** [or **Maria** or **Madonna** or Blessed **Virgin** or the **Virgin** Mary or **Christotokos** or **Theotokos** or anything about the **Mother of Jesus** or clear equivalents]

14. In 2004, this structure was illuminated with a pink light for breast cancer awareness month. For 10 points each:

[10] Name this tallest steel archway in the world, located in St. Louis.

ANSWER: **Gateway** Arch

[10] Eero Saarinen, the Finnish-American architect of the Gateway Arch, also incorporated wing-like structures and sweeping curves into his designs for two of these facilities: one in New York named after JFK and one in Northern Virginia named after Dulles.

ANSWER: **airports** [or airport **terminals**]

[10] Saarinen designed one of these venues, nicknamed “The Whale”, for Yale University, his alma mater. The venue is officially named for two Yale graduates with the surname “Ingalls”.

ANSWER: ice **rink** [accept similar answers, such as hockey **rink**]

15. Answer the following about racism against Asian-Americans in the Western US. For 10 points each:

[10] This deadliest incident of anti-Asian violence in US history, in which at least 28 Chinese miners were killed, occurred in a Wyoming mining boomtown in 1885.

ANSWER: **Rock Springs** Massacre

[10] This ethnicity was targeted by a policy of internment during World War II after they were associated with the regime that perpetrated the Pearl Harbor attack. Depending on their birthplace, they could be classified as *nisei* or *isei*.

ANSWER: **Japanese**-Americans

[10] The passage of the Chinese exclusion Act was heavily supported by this head of the Workingman’s Party of California who coined the slogan “The Chinese Must Go”.

ANSWER: Denis **Kearney**

16. The band behind this album has supported its central message, with former bassist Roger Waters vocally expressing his disapproval for Donald Trump in recent concerts. For ten points each :

[10] Name this Pink Floyd album, which has been noted for its now ironic lyrics, including, “Mother should I run for president? Mother should I trust the government?” before asking if the speaker should build the title structure.

ANSWER: *The* **Wall**

[10] The protagonist of The Wall, Pink, states “there is no pain you are receding” in this song. The second of its guitar solos is said to be among the best work of David Gilmour, who sings its chorus.

ANSWER: “**Comfortably Numb**”

[10] Some of the origin for the sociopolitical focus of The Wall was said to come from this earlier album, which is inspired by a similarly named Orwell novel. The 17 minute long track “Dogs” is a fan favorite from this album.

ANSWER: **Animals**

17. The resistance of these materials decreases as temperature increases. For 10 points each:

[10] Name these materials whose properties are between those of insulators and conductors. These materials are used to make diodes

ANSWER: **semiconductors**

[10] In this process, impurities are added to a semiconductor to modify its conductivity. Commonly atoms used for this technique include gallium and phosphorus.

ANSWER: **doping**

[10] Elements from this group are good p-type dopants, since they function as electron acceptors when doping silicon, thus leaving a vacant electron “hole” that can move around the lattice and function as a charge carrier.

ANSWER: Group **13** [or Group **III**; or Group **3A**; accept **boron** group]

18. Answer the following about the end of the Ethiopian empire, for 10 points each:

[10] That end came with the overthrow of Haile Selassie, the last emperor of an Ethiopian dynasty named for and supposedly descended from this Biblical king.

ANSWER: King **Solomon** [or **Shlomo** or **Jedidiah** or **Lemuel**]

[10] Haile Selassie was replaced by this Communist military regime that would eventually come to be led by Mengistu Haile Mariam. This regime committed the “Red Terror” atrocities and attempted to collectivize agriculture with disastrous results.

ANSWER: **Derg** [prompt on **Committee**]

[10] Several years after the fall of the Empire, Ethiopia’s Ogaden region was invaded by Siad Barre, the president of this neighboring country with its capital at Mogadishu.

ANSWER: **Somalia**

19. Name some European canals, for ten points each:

[10] This Greek city on an isthmus had an ancient greased track called the *diolkos* replaced with a canal in the 19th century.

ANSWER: **Corinth**

[10] A canal in Russia connects these rivers, the two longest in European Russia. A city named for one of these rivers was known under Soviet rule as Stalingrad, and the other of these rivers is the namesake of one of Russia’s largest Cossack groups.

ANSWER: **Volga** River and **Don** River

[10] This Italian city on an archipelago in the Adriatic Sea is known for its many canals, including those that run past its St. Mark’s Cathedral and Doge’s Palace.

ANSWER: **Venice** [accept **Venezia**]

20. This phenomenon causes the phase velocity of a wave to depend on frequency. For 10 points each:

[10] Name this phenomenon that causes light to split into the colors of a rainbow when passing through a prism.

ANSWER: optical **dispersion**

[10] Dispersion can also affect this other measure of wave velocity. In contrast to phase velocity, this velocity represents the velocity of the overall shape of the waves’ amplitudes.

ANSWER: **group** velocity

[10] This other phenomenon occurs when a wave bends around an obstacle. It comes in Fraunhofer and Fresnel types.

ANSWER: **diffraction** [accept Fraunhofer **diffraction** or Fresnel **diffraction**]