

2015 George Oppen: Questions courtesy of Anne Hathaway's cow-milking fingers
Written by Auroni Gupta, Stephen Eltinge, and Mike Cheyne
ROUND 4

TOSSUPS

1. The entry of this pathogen into hepatocytes requires the inIAB operon. This pathogen's virulence genes are silent at 30 degrees Celsius, but once the temperature hits 37, the hairpin structure of PrfA melts and expression of genes such as Hly begins. This pathogen is instilled in a rabbit or guinea pig, resulting in severe keratoconjunctivitis, in a positive Anton test. This is the only Gram-positive bacteria whose lipopolysaccharides contain endotoxin. This bacteria uses extensive (*) "rocket" actin polymerization to move through eukaryotic cells, and displays a "tumbling motility" when viewed under a light microscope. This bacteria is a common cause of meningitis in both immunosuppressed people and neonates, which is why pregnant women are advised to avoid eating soft cheeses and drinking unpasteurized milk. For 10 points, identify this bacteria, with species name *monocytogenes*, named for the Englishman who pioneered sterile surgery.

ANSWER: Listeria *monocytogenes*

2. This author created a character who tiptoes away immediately after a cat knocks over a cream jar, and screams "Put head back! Put head back!" after a man decapitates a duck with a tomahawk. A story by this author ends with the two main characters constantly interrupting each other until both of them forget what they were going to say, soon after realizing that there's no need to stop the organ-grinder. The protagonists of that story by this author, who contemplate dismissing the maid Kate and giving a porter a top-hat, call each other Con and Jug. Jose performs a rousing rendition of "This life is weary" on the piano in this author's most famous story, whose protagonist is unable to (*) finish the sentence "Isn't life --" after she sees her neighbor's corpse. The poor Scott family is brought a basket of leftovers from the title event hosted by the Sheridans in that story by her. For 10 points, name this author of "Prelude," "The Daughters of the Late Colonel," and "The Garden Party," who grew up in New Zealand.

ANSWER: Katherine Mansfield [or Katherine Mansfield Beauchamp Murry]

3. A character in this film observes that in-breeding between cousins produced "monkeys ready to clamber up the chandelier" upon watching young girls jumping up and down on a bed. During a chaotic battle sequence in this film, filled with bomb craters and destroyed buildings, a group of women in the slums capture a man wearing a sash and top hat, and hang him. The protagonist of this film skulks off to a room where the portrait of an old man on his deathbed moves him to consider his own mortality, when he is asked to dance by a woman who had just made her society debut at an extended ballroom sequence that takes up 45 minutes of screen time. This film engendered controversy with its choice of the foreign-born (*) Burt Lancaster to play the lead role opposite Claudia Cardinale as Angelica Sedara. In this film, the elderly Prince of Salina, Don Fabrizio, worries about irrelevancy in the fast-moving political landscape of the Risorgimento. For 10 points, name this 1963 Luchino Visconti film, an adaptation of a novel by Giuseppe Tomasi di Lampedusa.

ANSWER: *The* Leopard [or *Il Gattopardo*]

4. This man warned of a "barren marketplace of ideas that had only sellers and no buyers" in his concurring opinion for *Lamont v. Postmaster General*. In *Miller v. California*, this justice abandoned a test he had authored defining what constitutes obscene material. This justice and Thurgood Marshall alternated issuing dissents in every Supreme Court decision in which a death sentence was not vacated. This justice wrote that "we do not consecrate the flag by punishing its desecration" in the majority opinion he authored for *Texas v. Johnson*. Despite being a Democrat, this (*) New Jersey Supreme Court justice was named to the Supreme Court by Eisenhower. This justice's best-known opinion may be the majority one he authored for a decision which offered six criteria for political questions and stated that redistricting was justiciable by federal courts because it met none of them, leading to the "one person, one vote" principle. For 10 points, name this progressive associate justice who wrote the *Baker v. Carr* decision, and served from 1956 to 1990.

ANSWER: William J. Brennan [or William Joseph Brennan Jr.]

5. A prophecy mentioned in this book states that the "ships of Kittim" will come from the west to attack Assyria and Eber. In this book, many people die after being bitten by non-flying fiery serpents, so God orders

the creation of a brazen serpent atop a pole and promises that bitten people who gaze upon it will live. This book is the first to relate how two men went to the high places of Peor, Pisgah, and Baal, offering seven altars at each of them. Samuel Morse took his phrase "What hath God wrought" from this book. A man first mentioned in this book refuses to (*) curse the Israelites despite being ordered to do so by Balak, and mistreats his donkey until it is given the power of speech and complains. Of the twelve spies dispatched in this book, Caleb and Joshua report that Canaan is a land overflowing with milk and honey. The leprosy-afflicted Miriam and Aaron die in this book, in which Moses appoints Joshua his successor. For 10 points, name this fourth book of the Bible, which precedes Deuteronomy.

ANSWER: Book of Numbers [or Arithmoi; or Bemidbar]

6. The best-known experience of this character repeats itself when he dodges an approaching vehicle and steps on a series of uneven paving stones, in a section in which he returns from a sanatorium to a wartime city ravaged by a blackout. This character snatches away a mirror from his maid to spare his dying grandmother from seeing a reflection of her illness. A magic lantern that projects pictures from bedtime stories onto bedroom walls worsens the insomnia of this character, who relies on his mother's nightly goodnight kiss to fall asleep. This character falls in love with a "flock" of girls he sees at the seaside resort of (*) Balbec. In the novel *The Fugitive*, this character enlists the aid of his best friend Robert de Saint-Loup to find out why Albertine abandoned him. An involuntary memory surges through this character's mind as he tastes a tea-soaked Madeleine. For 10 points, name this autobiographical narrator of *In Search of Lost Time*, who shares his first name with the author of the series.

ANSWER: Marcel [accept the narrator of Remembrance of Things Past or the narrator of In Search of Lost Time or the narrator of A la recherche du temps perdu before the word narrator is read]

7. This actor played a character who sells a girl a copy of the Skip James album *Devil Got My Woman*, and later loans her a poster of a caricatured black man that she submits as an art project. In that role, for which he received a Golden Globe nomination for Best Supporting Actor, he appeared opposite Thora Birch and Scarlett Johansson in an adaption of a Daniel Clowes graphic novel. In addition to portraying Seymour in *Ghost World*, this actor played a character who receives an Oldsmobile Cutlass (*) Ciera from a man who first contacts him through Shep Proudfoot. Another character of his is last seen ducking out of a door with a bag of stolen diamonds after hiding from a Mexican standoff. One of his characters is fed into a wood chipper by his accomplice Gaear Grimsrud, while another delivers a monologue in a diner about why he doesn't tip. For 10 points, name this actor, who played the kidnapper Carl Showalter in *Fargo* and the traitorous Mr. Pink in *Reservoir Dogs*.

ANSWER: Steve Buscemi

8. This book mentions how Roscoe Conkling provoked laughter by calling reformers "man-milliners." This book ridicules the notion that a writer needs to take up gambling to attain Dostoevsky's genius as part of a sustained attack on the "cult of alienation" championed by the beatniks. One of the final chapters of this book attacks Dewey's philosophy of education for promoting vague, directionless growth in children. This book examines the contribution of the Second Great Awakening and other evangelical revival movements to the title phenomenon in its second section, "The Religion of the Heart," and traces its political origins to the contest between (*) John Quincy Adams and Andrew Jackson. This book starts with twelve "exhibits," including one which provides the popularity of using "egghead" to refer to Adlai Stevenson as the prime example of the title phenomenon. For 10 points, name this Pulitzer-winning 1964 study of the dumbing down of the United States, written by Richard Hofstadter.

ANSWER: Anti-Intellectualism in American Life

9. Pentti Eskola proposed a system for classifying the conditions under which this process occurs. The presence of the stishovite and coesite polymorphs of silicon dioxide may indicate the occurrence of a particularly violent type of this process. A saltwater-mediated hydrothermal type of this process that occurs at black smokers creates deep-sea deposits of copper and nickel ore. Akiho Miyashiro proposed the existence of parallel paired belts named for this process that have contrasting (*) mineralogy. The relative degree, or grade, of this process is measured by examining index minerals. Shearing forces during this process can result in foliation. This process, which occurs in "regional" and "contact" subtypes, starts with a protolith and results in products such as marble, slate, and gneiss. For 10 points, name this geological process in which the application of heat and pressure changes a rock from one type to another.

ANSWER: metamorphism

10. People performing this activity hired assistants known as bear-leaders or *cicerone*. The Catholic priest Richard Laselle coined the term for this activity, whose practitioners formed most of the clientele for Thomas Cook's business. Pompeo Batoni specialized in portraits of men undertaking this activity. Several people who performed this activity together founded the Society of Dilettanti. William Beckford collected his experiences performing this activity in the book *Dreams, Waking Thoughts, and Incidents*. In later years, women began to participate in this activity with (*) chaperones, as Lucy Honeychurch does in E.M. Forster's *A Room With a View*. People undertaking this activity might budget in some study time at Heidelberg University or take a detour to the recently-unearthed ruins of Pompeii and Herculaneum, but usually they spent the largest chunk of their time in Rome and Venice. For 10 points, name this extensive vacation throughout Europe that many young aristocratic men undertook as a rite of passage in the 17th and 18th centuries.

ANSWER: Grand Tour [prompt to tourism or traveling to Europe or synonyms]

11. By publishing one of these compounds, Brintzinger and Kaminsky disproved Ziegler and Natta's hypothesis that polymer tacticity is always induced at the structure of the surface of the initiator. The Josiphos ligand uses one of these compounds as a scaffold. If these compounds have an intermolecular bridge, then they are prefixed *ansa-*. The most famous of these compounds has, unusually for an organic compound, a very low potential for one-electron oxidation of around 0.5 or 0.64 V. Schwartz's, Petasis, and (*) Tebbe's reagents are all derivatives of these compounds. The thirty-electron rule must be followed by a combination of two of these compounds, known as a triple-decker complex. The best-understood of these compounds has six pi electrons, but has a hapticity of 5, and is the most famous sandwich compound. For 10 points, name these compounds in which two cyclopentadienyl rings are coordinated to a central metal atom, such as ferrocene.

ANSWER: metallocenes

12. A general in this war claimed that was foiled by ten thousand archers, referring to soldiers engraved on gold coins used to fund his enemies. In this war, an unsupported unit of hoplites was butchered by a unit of peltasts using hit-and-run tactics, commanded effectively by Iphicrates. After this war, all Greek cities maintained their independence, save for Lemnos, Imbros, and Scyros, which were given to the Athenians. A conflict between Locris and Phocis served as the catalyst for this war, whose first clash led to the death of (*) Lysander at the Battle of Haliartus. During this war, the construction of a sanctuary for Aphrodite in Piraeus was ordered, along with the final reconstruction of the long walls, by Conon following his naval victory at the Battle of Cnidus. Antalcidas journeyed to the court of King Artaxerxes II to negotiate the peace that ended this war, which is thus known as the King's Peace. For 10 points, name this 395 to 387 war which pitted Sparta against a coalition of cities, including the namesake one situated on a narrow isthmus.

ANSWER: Corinthian War

13. Frederick Antal claims that the pose of two people in the last painting from this series resembles that of a *Pieta* by Annibale Caracci, in an article about the artist "and his borrowings." In the penultimate image from this series, a telescope pokes its way through a barred window, and a woman at the right of the canvas faints near discarded scraps of paper. Oil from a street lantern is dumped on the head of a man in a painting from this series, in which men with sprigs of leek in their hats nearly arrest him. A foil-carrying fencing master, a violin-clutching dancing master, and a music master at the harpsichord, often said to represent (*) George Handel, appear in the second entry in this series. In the first of these paintings, the protagonist is being measured for new clothes while his servants mourn his dead father. Despite the assistance of Sarah Young, the pregnant fiancée he spurned, the protagonist of this series becomes a debtor and ends up first in Fleet Prison, then in Bedlam Asylum. For 10 points, name this eight-painting series about the libertine Tom, by William Hogarth.

ANSWER: The *Rake's Progress*

14. A long poem by this author contains a conversation in which a woman says "I should like to be alone," and a man replies "why not be alone together?" This author offered a cheeky defense of the "plain American which cats and dogs can read" in a poem titled "England." This author wrote of "the white volcano with no weather side; lightning flashing at its base," in a poem inspired by a trip to Mount Rainier. This author transformed Hart Crane's "The Wine Menagerie" into unrecognizable free verse, and outright rejected his "At Melville's Tomb," as editor-in-chief of *The* (*) *Dial*. This author lists a "tireless wolf under a tree" and "the

immovable critic twinkling his skin like a horse that feels a flea" as examples of things we do not admire because we do not understand them, in a poem that balks at the expectation that "literalists of the imagination" be asked to present "imaginary gardens with real toads in them." In that most famous poem of hers, she states "I, too, dislike it." For 10 points, name this Modernist poet of "An Octopus" and "Poetry."

ANSWER: Marianne Moore

15. Some performances of this symphony restore the thirteen bars that its composer decided to remove towards the end. The finale of this symphony begins with a call for only two horns, followed by a pause, after which one of the horns accompanies a violin. The first movement of this symphony contains a waltz-like melody played by the oboe and violin, but the coda abruptly and unexpectedly reprises the introduction. The violin solo in this symphony's second movement was intended for Giovanni Battista Viotti. The clarinets are absent from the second movement of this symphony, which is in double-variation form, alternating between C major and C minor, and is marked "Andante piu tosto Allegretto." Like the symphony that follows it, the opening melody of this symphony's last movement is taken from the (*) Croatian folk song "A little girl treads on a brook." After this symphony introduces its title feature on E-flat, the bass instruments play a theme whose first four notes are taken from the Dies Irae. For 10 points, name this penultimate Haydn symphony, nicknamed for the long stretch of timpani notes at the start.

ANSWER: *The Drumroll* symphony [or Franz Joseph Haydn's Symphony No. 103 in E-flat major; accept 103 after "Haydn" is read; or Hoboken 1/103; or H. 1/103]

16. An office building in this city, whose top is shaped like a ship's prow, was commissioned by a saltpeter magnate who made his fortune in Chile, hence the name Chilehaus. This city contains the world's largest contiguous warehouse complex, built on oak piles, in its renovation-heavy HafenCity quarter. John Lennon played a set with a toilet seat around his neck during The Beatles's string of performances in this city's notorious Reeperbahn red-light district. Johannes Brahms was baptized in this city's St. Michael Cathedral, which joins St. James's, St. Peter's, St. Catherine's, and St. (*) Nicholas's in a quintumvirate of Lutheran cathedrals that have all been burnt and rebuilt. This city cemented its status as an industrial powerhouse by absorbing the towns of Wandsbeck, Harburg, and Altona. This former Hanseatic town is the largest city on the Elbe and the second-largest port in Europe. For 10 points, name this second-largest city in Germany, which lends its name to a style of sandwich with ground meat patties.

ANSWER: Hamburg, Germany [or Free and Hanseatic City of Hamburg; or Freie und Hansestadt Hamburg]

17. Three naked children ultimately scare away one of these beings after their father creates the illusion of invincibility by fetching a whole herd of oxen, an entire well's worth of water, and twenty trees worth of firewood. One of these beings explodes after drinking too much water to slake his thirst from consuming a sulphur-stuffed lamb. One of these beings, who has a torso covered with fiery snakes, has an affair with the wife of Vladimir I of Kiev, and gets chopped into pieces in a fight because the rain renders him useless. The blood of one of these creatures named Zmey Gorynych (*) traps the hero Dobryna Nikitich for three days. A non-Slavic example of these beings is dispatched by a man who digs numerous trenches for that creature's blood to flow into, then stabs the being in the shoulder, cooks and eats its heart, and learns the language of the birds. Regin orders the slaying of that being of this type, who guards an enormous treasure hoard. For 10 points, name this kind of creature that appears on the coat of arms of Moscow, about to be speared by St. George.

ANSWER: dragons [or serpents before "snakes" is read; or zmey before it is read; or zmai before "zmey" is read; or smok; or lamya]

18. After he reported seeing nothing to his leader, this man was sent back to a set of ruins, where he slaughtered a single naked woman with long, black hair. The beginning of the end for this man began when spies reported to his superior that he bathed in waters mixed with alcohol. He personally used and broke nine swords at a battle in which he equipped his rearguard with new banners to give the illusion of reinforcements and force an enemy retreat. Women charged at their husbands with tent poles to coax them back into the fight at the site of this general's most famous victory, won over the Armenian commander Vahan. This man slaughtered an enemy army that had (*) chained itself together to prevent retreat in the Battle of the Chains, initiating the conquest of Persia. This man was ultimately dismissed by Umar, but not before inflicting a crushing blow to the Byzantines at the Battle of Yarmouk, and essentially singlehandedly conquering the whole of the

Arabian peninsula for the Rashidun Caliphate. For 10 points, name this "Sword of God," a badass early Muslim general.

ANSWER: Khalid ibn al-Walid [or Abu Sulayman Khalid ibn al-Walid ibn al-Mughirah al-Makhzumi; or Sayf Allah al-Maslul; accept Sword of God before mentioned; accept Sword of Allah before mentioned]

19. In cosmology, a radius described by this adjective is the radius within which the matter density is 200 times the critical density of the universe. A set of numbers described by this adjective can be computed by summing over the contributions of n -body linked cluster diagrams, and the second of those numbers equals half of the excluded volume times one minus the interaction energy over kT . Those numbers are the coefficients in an equation of (*) state described by this adjective, which equates pressure over kT to a power series in density. A theorem named for this adjective applies to two-body systems where the potential energy is some power n of the inter-particle distance. That theorem equates the average momentum-squared over mass to the average dot product of force with displacement. For 10 points, identify this adjective which names a theorem that relates a system's average kinetic and potential energies.

ANSWER: virial [or virial theorem; or virial expansion; or virial coefficients]

20. The narrator of this work teases that there is a great mystery in the number of times the letter "O" appears in it, multiplied by seven and divided by nine, challenging princes to lock seven scholars up for seven years so that they can write seven commentaries on this text. This work discusses how a great prince turned into a tyrant when the capture of his lover by an enemy caused his disused semen to build up, ascend his body, and infect his brain, in its oft-excerpted "Digression on Madness." In the preface to this work, its narrator describes the maritime custom of throwing the title object toward a whale, symbolic of the Hobbes's *Leviathan*, to divert its attention from boats. Peer pressure forces the main characters of this work to add shoulder-knots, silver fringes, Indian figures, and other silly ornaments to the marvelous (*) coats that they inherit. This work's three main characters, Peter, Martin, and Jack, are stand-ins for Saint Peter, Martin Luther, and John Calvin. For 10 points, name this satire of Christian denominational strife, the first major work by Jonathan Swift.

ANSWER: A Tale of a Tub

TB. A derivation of these statements using only Newton's second law and the canonical position-momentum commutation relation was published by Freeman Dyson in 1989 and credited to Richard Feynman. In the theory of differential forms, they assert that the field strength tensor is closed and exact, and they give the exterior derivative of its Hodge star in terms of a pseudo three-form. In empty space, applying the curl-of-the-curl identity to these statements yields two vectorial (*) wave equations. Their relativistic formulation sets the d'Alembertian of the four-potential equal to a constant times the four-current. One can convert between their integral and differential forms using the divergence theorem and Stokes' theorem. Both of those forms incorporate the displacement current that their namesake added to correct Ampere's law. For 10 points, name this set of four differential equations that govern classical electromagnetism.

ANSWER: Maxwell's equations

BONUSES

1. Archer John Porter Martin and Richard Synge co-won the 1952 Nobel Prize in Chemistry for developing a form of HPLC that can separate substances with similar values for this property. For 10 points each:

[10] Name this ratio of the concentrations of a compound dissolved in two immiscible phases, such as in octanol and water.

ANSWER: partition coefficient [or distribution coefficient; or log P; or log D]

[10] The partition coefficient is a measure of the differences in this property between the components of a mixture. Sodium chloride has this property in water, whereas lead sulfate does not.

ANSWER: solubility [accept word forms]

[10] In pharmacology, the "efficiency" linked with this property of a drug is defined as the pIC50 of the drug minus its partition coefficient. Fluorocarbons are a good example of compounds which are hydrophobic, but which do not have this property.

ANSWER: lipophilicity [accept word forms]

2. Identify these authors of modern Japanese crime fiction, for 10 points each.

[10] The Dowager assigns Aomame to murder abusive husbands in *IQ84*, a recent novel by this author who wrote about Toru Watanabe's college experiences in *Norwegian Wood*.

ANSWER: Haruki Murakami [or Murakami Haruki]

[10] A man searching for his missing wife in an underground hospital keeps being interrupted by a talking horse interested in his penis in *Secret Rendezvous*, a book by this author of a novel in which a private eye searching for Nemuro Haru's missing husband gets lost in an Borgesian world, symbolically guided by the title *Ruined Map*.

ANSWER: Kobo Abe [or Abe Kobo; or Kimifusa Abe; or Abe Kimifusa]

[10] This contemporary female author wrote about the juvenile killer Worm in *Real World*, included a subplot about underage male prostitution that was removed from the American edition of her novel *Grotesque*, and chronicled the descent into insanity of four bento factory workers in her book *Out*.

ANSWER: Natsuo Kirino [or Kirino Natsuo]

3. After the initial light artillery barrage against adobe brick structures proved ineffective, American soldiers at this battle adopted the Texan practice of "mouse holing" through homes and fighting hand-to-hand inside. For 10 points each:

[10] Name this 1846 battle which ended with Pedro de Ampudia surrendering a large city in Nuevo Leon in Northern Mexico.

ANSWER: Battle of Monterrey

[10] This victor at the Battle of Monterrey was inducted into the Society of the Cincinnati for his stunning triumph at the subsequent Battle of Buena Vista. Later still, he became president of the US.

ANSWER: Zachary Taylor

[10] At the Buena Vista, Taylor secured himself a great campaign slogan by giving this infamous order to Braxton Bragg to use more firepower. You can give either the awesome version or the more polite, subdued one.

ANSWER: "Double shot your guns and give 'em hell, Bragg" [or "Tell him to give 'em hell"; or "A little more grape, Captain Bragg"; prompt on "give 'em hell"]

4. Engelbert Humperdinck composed extra music for the transition between the first two scenes in early performances of this opera, whose main soprano role first appears carrying a vial of balsam from Arabia. For 10 points each:

[10] Name this opera whose noteworthy excerpts include Kundry's solo "Ich sah das Kind" and Amfortas' Act I lament.

ANSWER: Parsifal

[10] Audiences at Bayreuth don't clap between the acts of this composer's opera *Parsifal*, although the same could probably not be said of his infinity-hour long *Ring Cycle*.

ANSWER: Richard Wagner [or Wilhelm Richard Wagner]

[10] The Prelude to Act I of *Parsifal* is sometimes performed in conjunction with this musical excerpt from Act III, which plays when Parsifal returns to the castle of the Grail bearing the Holy Spear.

ANSWER: "Good Friday Music" [or "Karfreitagszauber"; or anything with Karfreitag, searching for things in the original language is hard]

5. This period of time is completely fast-free in Eastern Orthodoxy, and begins with a celebration of the Adoration of the Shepherds, followed by the "Synaxis of the Theotokos." For 10 points each:

[10] Name this numbered, multi-day season that ends with the Feast of the Epiphany and celebrates the nativity of Jesus.

ANSWER: the Twelve Days of Christmas [or Christmastide; prompt on Christmas season; prompt on Christmas]

[10] Celebrants of Christmas in medieval England ported over a custom from Saturnalia by appointing this officer to preside over the Feast of Fools during Christmas season.

ANSWER: Lord of Misrule [or Abbot of Unreason; or Prince des Sots]

[10] Roughly two-thirds of the way through Orthodox Christmas season, a feast celebrating this event in Jesus's life is observed on January 1st. In the 20th century, the Roman Catholic Church excommunicated anyone mentioning a relic that was created during this event, and removed the feast about it from the church calendar.

ANSWER: circumcision of Jesus [or Jesus's bris]

6. Martin Starr has been on several short-lived television shows. Name some things about them, for 10 points each.
[10] Starr's first recurring role was as this character on *Freaks and Geeks*. He wears enormous glasses and is a fan of the show *Dallas*.

ANSWER: **Bill Haverchuck** [accept either name]

[10] Starr played the obnoxious aspiring screenwriter Roman DeBeers on this Starz show, which only ran for two seasons. It starred Adam Scott as Henry Pollard, a listless employee of the title catering service.

ANSWER: **Party Down**

[10] Starr plays Bertram Gilfoyle on this HBO show, which isn't technically short-lived since it has only aired one season. It centers on the employees of the tech startup Pied Piper, led by Thomas Middleditch's Richard Hendricks.

ANSWER: **Silicon Valley**

7. The inbreeding coefficient is one minus the observed frequency of heterozygotes over the heterozygote frequency expected from this model. For 10 points each:

[10] Name this principle demonstrated by two biologists, showing that, absent external factors, genotype and allele frequencies remain the same across generations in a population.

ANSWER: **Hardy-Weinberg** principle

[10] In this Hardy-Weinberg principle-violating phenomenon, alleles increase in frequency if they are linked to mutations or alleles at another locus that have been positively selected for. This phenomenon can either happen to fixation or to extinction.

ANSWER: genetic **hitchhiking** [or **genetic draft**; prompt on **selective sweep**]

[10] By its very nature, genetic hitchhiking renders impossible this form of natural selection, in which the extremes of a trait or allele are favored over the intermediate values, the opposite of stabilizing selection.

ANSWER: **disruptive** selection [accept word forms]

8. In this story, a huge lady with an expression that can be summarized as "DON'T TAMPER WITH ME" swings her purse at a woman who wears the exact same ugly green-and-purple hat as her. For 10 points each:

[10] Identify this story in which Julian accompanies his racist mother on a bus ride to her YWCA class.

ANSWER: **"Everything That Rises Must Converge"**

[10] "Everything That Rises Must Converge" was written by this Southern Gothic author, who wrote of a family that runs into the Misfit in her story "A Good Man is Hard to Find."

ANSWER: Flannery **O'Connor** [or Mary Flannery **O'Connor**]

[10] In this second story from the collection *Everything That Rises Must Converge*, the repentant landowner Mrs. May shrieks "Jesus, stab me in the heart!," a prayer that gets granted quite literally when an unruly bull belonging to her title farmhand gores her right in the chest.

ANSWER: **"Greenleaf"**

9. The proto-Welsh king Cadafael earned the disrespectful sobriquet "battle-shirker" for abandoning this king at the Battle of Winwaed. For 10 points each:

[10] Name this seventh-century king who defeated Oswald of Northumbria at the excellently-named Battle of Maserfield, establishing the supremacy of Mercia in the Heptarchy.

ANSWER: **Penda**

[10] J.O. Prestwich calls Penda the villain of the third book of the *Ecclesiastical History* written by this "Venerable" English monk.

ANSWER: Saint **Bede**

[10] Penda and his brother Eowa teamed up with the Gwynedd king Cadwallon ap Cadfan to defeat the canonized Northumbrian king Edwin at this 633 AD battle, fought in a drained lowland in South Yorkshire.

ANSWER: Battle of **Hatfield Chase**

10. A trip to Nova Scotia inspired this artist's canvas *Mountains and Sea*, created using a "soak stain" technique that gives it the appearance of a watercolor, even though it uses oil paints. For 10 points each:

[10] Name this abstract expressionist, who for a time lived in an artists' colony in Provincetown, Massachusetts, with her then-husband Robert Motherwell.

ANSWER: Helen **Frankenthaler**

[10] Clement Greenberg included Frankenthaler among a generation of abstract expressionist artists working in this style, characterized by canvases using slabs of unbroken hues, like in the paintings of Mark Rothko.

ANSWER: **color-field** painting

[10] In this variant of color-field painting practiced by Ellsworth Kelly, and California-based artists such as John McLaughlin and the husband-and-wife team Lorser Feitelson and Helen Lundberg, abrupt transitions occur between the different color fields. Critic Jules Langsner coined this term.

ANSWER: **hard-edge** painting

11. This man avenged his loss to a coalition of Rajput kings at the First Battle of Taraori by raising a large army of horse archers and crushing them at the same site the next year. For 10 points each:

[10] Name this Afghan king who shared power with his brother Ghiyath until his 1202 death, and launched an invasion of northern India, leaving administration to his slave Qutbu l-Din Aibak.

ANSWER: **Mu'izz** ad-Din Muhammad [or **Muhammad of Ghor**; prompt, I suppose, on **Muhammad**]

[10] Mu'izz's slave Qutbu established this Islamic kingdom in North India, headquartered in the namesake city, which in its final years from 1451 to 1526 was controlled by the Lodi Dynasty.

ANSWER: **Delhi Sultanate** [or **Sultanate of Delhi**]

[10] To avenge his ancestor Muhammad ibn Suri, Mu'izz attacked this city, the penultimate capital of the Khwarazmian dynasty, which was the birthplace of a man who embittered Hindu nationalists in Youtube comment sections everywhere by invading India no fewer than seventeen times.

ANSWER: **Ghazni** [or **Ghazna**; or Mahmud of **Ghazni**]

12. In the tale of *Culhwch (COOL which) and Olwen*, this man inflicts the first blow on the giant Ysbaddaden, and rides a giant salmon to the prison of Mabon ap Modron. For 10 points each:

[10] Name this Knight of the Round Table, a good friend of Kay's, who initially lies about completing a certain task entrusted to him by Arthur after the Battle of Camlann,

ANSWER: Sir **Bedivere** [or **Bedwyr**; or **Bedoier**]

[10] Bedivere's task is to return this magic sword of Arthur's back to the Lady of the Lake.

ANSWER: **Excalibur** [or **Caliburn**; or **Caledfwlch**; or **Calesvol**; or **Kaledvoulc'h**; or **Caliburnus**]

[10] This victim of a stress-induced-disemboweling was the brother of Sir Bedivere, and the official butler to King Arthur. In the Tale of Golagros and Gawane, this man's victory in a joust is invalidated because he failed to bring his opponent back as a captive.

ANSWER: Sir **Lucan**

13. This book offered a very useful definition of a man's income as "the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning." For 10 points each:

[10] Name this classic book by John Hicks, an early exposition of general equilibrium theory that argues that only ordinal utility is required to estimate the benefit garnered by a good or a service.

ANSWER: **Value and Capital**

[10] John Hicks's *Value and Capital* is a seminal text in this economic field that analyzes decisions made by individuals and small firms and how total income and production are distributed among them.

ANSWER: **microeconomics** [prompt on **micro**; prompt on **microecon**]

[10] This American economist made his mark on microeconomics by coining the terms "bounded rationality" and "satisficing" in explaining how individuals and small firms approach decision-making.

ANSWER: Herbert **Simon** [or Herbert Alexander **Simon**]

14. The organizer of this event is brought back to consciousness by having brandy forced down her throat, and requests that Irving Berlin's song "Always" be put on the gramophone so that it can begin. For 10 points each:

[10] Name this event from Act I of a 1941 play, which is conducted by a bicycle-riding enthusiast so that a novelist can research material for his upcoming thriller *The Unseen*. Elvira appears as a result of this event.

ANSWER: the **seance** from *Blithe Spirit*

[10] This comic British playwright made wacky love triangles the subject of his plays *Design for Living* and *Blithe Spirit*.

ANSWER: Noel **Coward** [or Sir Noel Peirce **Coward**]

[10] The airheaded flapper Jackie Coryton disrupts a game of charades with adverbs by suggesting the word "appendicitis" in this Coward play, whose plot is set in motion when each member of the Bliss family invites a different guest to spend the weekend at their country house.

ANSWER: Hay Fever

15. If this operation is zero for all pairs of a set of operators, then those operators can be used to uniquely identify a particle quantum state. For 10 points each:

[10] Name this binary operation. It gives 1 when applied to the harmonic oscillator lowering and raising operators, and $i\hbar$ when applied to position and momentum.

ANSWER: commutator

[10] If a set of operators commute, then they also possess this property. This term from linear algebra conceptually means that one can choose a basis in which all states are eigenstates of all operators.

ANSWER: simultaneous diagonalizability [prompt on partial answer; accept word forms such as simultaneously diagonalizable]

[10] If one of the operators has this property, then picking states with different eigenvalues will only get you to block-diagonal form. This term describes multiple states that have the same energy.

ANSWER: degenerate [or degeneracy]

16. This politician, who traveled around in a wheelchair driven by hand cranks, drafted the Law of 22 Prairial to streamline the Revolutionary Tribunal's process of purging people. For 10 points each:

[10] Name this key associate of Maximilien Robespierre and Louis Antoine de Saint-Just on the Committee of Public Safety.

ANSWER: Georges Couthon [or Georges Auguste Couthon]

[10] Couthon, Saint-Just, and Robespierre were all swept up and executed as part of a "reaction" during this summer month of the French Revolutionary Calendar.

ANSWER: Thermidor [accept Thermidorian Reaction]

[10] The Thermidorian Reaction marked the downfall of this faction, led by men such as Joseph-Nicolas Barbeau du Barran who sat at the highest benches in the Assembly.

ANSWER: Montagnards [or the Mountain]

17. This group, which is isomorphic to the integers in the case of a circle, is the first homotopy group. For 10 points each:

[10] Identify this group from topology. Intuitively, it describes which paths in a space can be deformed into one another, and hence encodes information about "holes" in a space.

ANSWER: fundamental group

[10] Fundamental groups are used in the branch of topology named for this adjective. This adjective describes numbers that are a root of a polynomial with integer coefficients, as opposed to transcendental numbers.

ANSWER: algebraic

[10] For a space X that can be decomposed into path-connected subspaces all connected by a basepoint, this theorem allows one to compute the fundamental group of X given the fundamental groups of the subspaces.

ANSWER: Seifert-van Kampen theorem [or van Kampen's theorem]

18. The ante-penultimate of these pieces by this composer was written during his stay in an orthopedic clinic at Kurgan, and begins with a twelve-tone row played by the viola. For 10 points each:

[10] Name these fifteen chamber pieces, the best-known of which is the eighth, which quotes the song "Tormented by Grievous Bondage" and is dedicated "to the victims of fascism and war."

ANSWER: string quartets by Dmitri Shostakovich [or Dmitri Dmitriyevich Shostakovich string quartets]

[10] Shostakovich wrote as many string quartets as he did pieces in this genre, including one nicknamed *Babi Yar* which sets poems by Yevgeny Yevtushenko, and another in which an "invasion theme" represents the Nazi advance on Leningrad.

ANSWER: symphony [or symphonies]

[10] Rudolf Barshai made a chamber symphony arrangement of this string quartet by Shostakovich, who preempted accusations of formalism by giving the movements titles like "Blithe ignorance of the future cataclysm" and "The eternal question: Why? And for what?"

ANSWER: *String Quartet No. 3* in *F* major [or op. 73]

19. This book asserts that the sequence "A-Z-E-R-T," made from the first five letters of the French typewriters, is a statement, but the typewriter itself isn't. For 10 points each:

[10] Name this 1969 methodological book which shows that systems of thought in the history of ideas are governed by underlying continuities.

ANSWER: The **Archaeology of Knowledge**

[10] *The Archaeology of Knowledge* expounds upon the archaeological method this French thinker used in books such as *Madness and Civilization* and *Discipline and Punish*.

ANSWER: Michel **Foucault** [or Paul-Michel **Foucault**]

[10] Foucault was embroiled in a beef with Jacques Derrida which began when Derrida attacked Foucault's *Madness and Civilization* in his essay "Cogito and the History of Madness," and escalated when Foucault annihilated Derrida's reading of Descartes and his theories about the text in this appendix to a later edition of the book.

ANSWER: "**My body, this paper, this fire**" [or "**Mon corps, ce papier, ce feu**"]

20. This poet wrote "Are you crying? Listen.. far off on the Lake of Chad / Wanders a gentle giraffe" in one of his many lyrics inspired by his yearly African safaris. For 10 points each:

[10] Name this Russian author of dreamy childlike poems such as "The Lost Tram," who poured anti-revolutionary sentiment into his collections *The Tent* and *Pillar of Fire*. That sentiment got him rounded up and executed by the Cheka in 1921.

ANSWER: Nikolay **Gumilyov** [or Nikolay Stepanovich **Gumilyov**; or Nikolay **Gumilev**]

[10] Perhaps Nikolay Gumilyov's best-known literary accomplishment was his marriage to this far better-known poet, who channeled the agony of her son's arrest in *Requiem*, and also penned a "Poem Without a Hero."

ANSWER: Anna **Akhmatova** [or Anna **Andrejevna** Gorenko]

[10] The Acmeist poetry of Gumilyov and Akhmatova, the Futurist verses of Vladimir Mayakovsky, and the symbolist output of Max Voloshin all flourished during this period of Russian poetry, which lasted from roughly 1890 to the outbreak of the Russian Civil War. This term also denotes Latin-language literature of the 1st and 2nd centuries AD.

ANSWER: **Silver** Age [or **serebryanyy** vek, according to Google Translate; or **serebro**; be open to protests about this]

TB. Luigi Sagrati headed an Italian ensemble dedicated to performing chamber pieces by this composer, one of which imitates street singers in its movement "Passe calle." For 10 points each:

[10] Name this Italian composer whose 141 string quintets include *Night Music of the Streets of Madrid* and an E major piece that contains a very famous third movement minuet.

ANSWER: Luigi **Boccherini** [or Luigi Rodolfo **Boccherini**]

[10] Boccherini produced a guitar quintet arrangement of this last movement of his *Night Music*, which depicts the Madrid night watch declaring a curfew and closing the streets.

ANSWER: *La **Ritirata** di Madrid* [or *The **Retreat** from Madrid*]

[10] Boccherini was a virtuoso of this instrument, and called for it to be placed upon performers' knees and strummed like a guitar in the *Minuet of the Blind Beggars* from *Night Music of the Streets of Madrid*. This is the second-lowest string instrument, after the double bass.

ANSWER: **cello**