

**Chicago Open 2013: No Subtext, Just Tacos.**

**Packet by Don't Buzz Until You See the Whites of our Eyes (Hugh Bennett, Tris Cole, Edmund Dickinson, Joey Goldman)**

**Edited by Matt Bollinger, Libo Zeng, Sriram Pendyala, Dennis Loo, Sinan Ulusoy, and Kevin Koai, with invaluable contributions by Matt Jackson**

## 5/5 LITERATURE

1. **A highwayman on this show holds someone up by saying "Your money or your life?" only to realise it was a slip of the tongue, having meant to say "Your money and your life!" That man defects, alongside Sean, the Irish Bastard, to join the Hawk. A master of disguise in this programme is given away when he wears too good a disguise, having not realised that the person he is impersonating is "a sad, insane old woman with an udder fixation." The (\*) Mind-Your-Own-Business-You-Nosy-Bastard party receives 16,472 votes in an election in the rotten-borough of Dunny on the Wold in another episode. In the final season of this show, Captain Darling is told that the German front line has a huge number of elephants guarding it. A girl called Bob is told that its protagonist has "rather a good line in rough shag" by General Melchett, who is portrayed by Stephen Fry. For 10 points, name this show that follows many generations of a character portrayed by Rowan Atkinson.**

**ANSWER: Blackadder [or The Black Adder]**

2. **A chronicle of this duchy was written by the author of a forged *Life of Martial*, the monk Ademar. A group of bishops in this region agreed to excommunicate nobles who blatantly killed defenseless peasants, beginning the medieval Peace of God movement. Andreas Capellanus described a "Court of Love" adjudicated by women at a castle in this duchy. A Duke of this region, William I, gained the epithet "the Pious" by founding the (\*) Abbey of Cluny. Odo the Great was a Duke of this region who fatefully asked for Charles Martel's assistance against the encroaching Arabs. A city in this region was famed for its enamels until being brutally sacked by Edward the Black Prince, who became the prince of this region by the Treaty of Bretigny. For 10 points, name this French duchy containing the castle of Poitiers, which was inherited by the wife of Henry II, Eleanor.**

**ANSWER: Aquitaine**

3. **Languages to control the device that performs this graphical task have largely made the fixed-function API obsolete; such languages are now used to program the rendering pipeline. Most languages for GPU programs performing this task are based on C; commonly used ones include Gelato, Houdini VEX, and RenderMan. It usually works by applying an(\*) illumination model, then using an interpolation algorithm. The flat type of it is fast in part because it requires only a single normal for the entire polygon and uses the lighting equation only once per polygon. A normal is calculated and the lighting equation used for each vertex in the smooth type of it named for Gouraud, while slower still is a variety that uses a smoothly varying surface normal vector and is named for Phong. For 10 points, name this computer graphics method of illustrating depth by varying the level of darkness.**

**ANSWER: Shading**

4. **This husband of Urmila made an important crossing on the back of Angada. This hero prevented an opponent from summoning an unstoppable tiger-born chariot by destroying a ladle used to offer butter to Agni. To save a woman from being eaten, this man cut off the demoness Surpanakha's nose, inadvertently starting a war. A god saves this avatar of Sesha from death by lifting an entire (\*) mountain upon which a magic herb grows. This slayer of Indrajit and third son of Dasaratha left a woman behind after hearing the dying Maricha take on his brother's voice, leading to the abduction of Sita. For 10 points, name this friend and brother of Rama in the *Ramayana*.**

**ANSWER: Lakshmana**

5. **Along with his father-in-law, this leader engaged an enemy holed up in an abandoned Butterfield Mail station, but lost against the never-before-seen howitzers deployed by James Carleton. This man granted free passage to Tom Jeffords' mailmen after Jeffords fearlessly rode into his people's land to request parley. This leader's tribe was wrongly blamed for the kidnapping of John Ward's young son Felix; brought into a US**

**Army camp, he escaped arrest through a hole he (\*)** cut in a tent with his knife. Afterward, he sought vengeance against the Americans when Lieutenant George Bascom executed his captive family and friends. This man waged ten years of guerrilla warfare from a hiding place in the Dragoon Mountains after the murder of his father-in-law and ally, Mangas Coloradas. For 10 points, name this Chiracahua Apache chieftain, their best-known leader other than Geronimo.

ANSWER: **Cochise**

6. The protagonist of this novel dreams of finding her grandmother wearing a mustache like a circus ringmaster; that occurs after its protagonist leaves the Denckman Circus when a lioness stops pacing and nearly cries upon seeing the girl next to her. In this novel's final scene, a prophecy that "one dog will find them both" comes true when the protagonist blacks out in an abandoned chapel before her friend gets on all fours, howls, and attacks her dog. T.S. Eliot wrote an introduction to the first edition of this book, which begins in Vienna as Hedvik Volkbein dies giving birth to Felix in its first section, (\*) "Bow Down." Its most famous section consists of a rant by the cross-dressing drunk Catholic doctor Matthew O'Connor. Sculptor Thelma Wood was the basis for its character of Robin Vote, who roams the streets of Paris and becomes the lover of Norah Flood. For 10 points, name this novel about lesbianism by Djuna Barnes.

ANSWER: Nightwood

7. Michael Nyman quoted this composer in his works *Chasing Sheep is Best Left to Shepherds* and *Memorial*. This composer used four flauts, a type of slide trumpet, in a march and canzona that he wrote for a royal funeral. He included the ground-bass song "Music for a while" in his incidental music for a play on the Oedipus story, and he included the countertenor duet "Sound the trumpet" in his birthday ode "Come, Ye Sons of Art." This composer also wrote the "Monkey's Dance," which is followed by the Chinese Woman's aria "Hark! Now the Echoing Air," in a work in which Juno sings (\*) "Thrice Happy Lovers" and "The Plaint," and the character of The Drunken Poet is added to an adaptation of *A Midsummer Night's Dream*. *Dioclesian*, *King Arthur*, and *The Fairy-Queen* are among this composer's semi-operas. For 10 points, name this English composer who included the lament "When I am laid in earth" in his opera *Dido and Aeneas*.

ANSWER: Henry Purcell

8. After this man sees "something white" on the ground, which turns out to be five trunks of chopped-down lime trees stripped of bark, he takes Simon to court. This man overhears the proverb "Loss and gain are brothers twain" while listening to his wife argue with his sister-in-law about the comforts of town life. On one journey, this character brings along tea and wine, which he offers to a man in a (\*) fox-fur cap. After leaving the second of two village communes, this man accepts a challenge in which he regularly digs holes with a spade. Ultimately, this protagonist of a nine-part short story confirms a dream in which the Devil laughs over his corpse by collapsing in front of the Bashkirs, having failed to walk in a large circle in one day. For 10 points, name this peasant buried under six feet of earth in Tolstoy's short story "How Much Land Does a Man Need?"

ANSWER: Pahom [or Pakhom]

9. A miniature device capable of utilizing this analytical technique for studying martian soil was present on both NASA rovers Spirit and Opportunity. A process analogous to the physical principle underlying this analytical technique necessitates the appearance of a zero-phonon peak on a plot of the optical absorbance of a sample of chromophores embedded in a solid matrix at low temperatures. Sodium nitroprusside is used as a common reference material in this type of spectroscopy where nuclei with spin-states greater than  $\frac{1}{2}$  experience a characteristic quadrupole splitting. A variant of this technique was used in an experiment used to show the existence of gravitational redshift by Pound and Rebka. For 10 points, name this technique which exploits the fact that a percentage of gamma-ray absorptions and emissions with nuclei are recoil-free, and can be used to probe oxidation states of iron-57 nuclei.

ANSWER: Mossbauer Spectroscopy (ACCEPT: Iron-57 Mossbauer Spectroscopy and other reasonable prefixed nuclei until mention of iron-57)

10. One character in this play sings, "Saturn greeted with curses / What came next a waste of breath" to the Cosmonauts after three children perform Buxtehude on their recorders; that occurs after he learns that his wife is leaving with her new missionary husband, Oskar Rose, for the Marianas Islands. When the Public Prosecutor forces another character in this play to hire men for the first time, she hires three boxing champions. An essay appended to this play begins, "I don't start out with a thesis but with a story" and consists of 21 bullet points. In this play, (\*) Monika Stettler is strangled by a man who is visited by King Solomon, who has supposedly been revealing the principle of Universal Discovery. Doktor von Zahnd, the antagonist of this play, manages a sanatorium housing two spies pretending to think they are Newton and Einstein to get close to Möbius. For 10 points, name this play by Friedrich Dürrenmatt.

ANSWER: *The* Physicists [or *Die* Physiker]

11. A writer with this surname had a long-running affair with the French diplomat Gaston Palewski. A soldier named Thomas with this surname had an affair with Edward James' wife Tilly Lochner and died in Burma during World War II, bereaving his father, Lord Redesdale. A muckracker with this surname attacked funeral homes for extracting money out of the bereaved in *The American Way of Death*. That woman of this name ran off to assist the (\*) Spanish Republic with Winston Churchill's "Red Nephew," Esmond Romilly. A woman with this surname, nicknamed "the Valkyrie" for her middle name, attempted suicide when Britain declared war on Germany; her sister from this family divorced the Guinness family heir to marry Oswald Mosley. For 10 points, give this maiden name of six aristocratic British sisters including the communist Jessica, author Nancy, and fascists Unity and Diana.

ANSWER: Mitford [or Freeman-Mitford; or Pamela Mitford, David Freeman-Mitford, Jessica Mitford, etc.; or Rodd until "Thomas" is read]

12. Materials that efficiently exhibit this effect include skutterudite whose void spaces are doped with rare-earth metals, in which the doped atom "rattles" in a cage. Common materials that exhibit this effect include heavy atom semiconductors like lead telluride alloys. The magnitude of this effect is measured by the zT factor, which is maximized for the smallest band gap such that it is still large enough to minimize the number of minority (\*) carriers. The ideal material exhibiting this effect would be an electron crystal-phonon glass. The Onsager reciprocal relations are used to derive the Thomson relations for this effect, one of which describes the Peltier effect. The Seebeck coefficient quantifies another form of this effect used in thermocouples. For 10 points, name this effect describing the inter-conversion between voltage difference and temperature gradients.

ANSWER: thermoelectric effect (accept thermomagnetic effect until "zT"; accept Thomson effect or Peltier effect or Seebeck effect until respectively mentioned, prompt afterwards; do not accept "pyroelectric effect" or "Joule-Thomson effect")

13. Alice Walton sponsored this architect's project to build a museum in the middle of an Arkansas ravine such that two buildings in the complex would be bridges over a pond. In Kansas City, this architect designed a center for the arts that resembles a pair of connected, sliced-up onions from the back. A single terrace, the "SkyPark," lies across three lined-up skyscrapers in a resort complex this man designed in Singapore. This architect of the (\*) Crystal Bridges Museum, Kauffmann Center and Marina Bay Sands apprenticed with Louis Kahn. His masters' project, an apartment complex consisting of 354 interlocking, jutting-out cubes that make up 158 residences, was built on a manmade island in the St. Lawrence River. For 10 points, name this Israeli-Canadian architect of the new Yad Vashem memorial, who also designed Montreal's Habitat 67.

ANSWER: Moshe Safdie

14. In writings about this set of works, their creator wrote that "Demon forms" of "Suicide, Intemperance, and Murder" appear in one of them as clouds, and drew attention to a white Egyptian lotus in the foreground of another. This set of works was first shown as a solo exhibit in the National Academy of Design, and is in the same genre as their creator's unfinished *The Cross of the World*. It's not *The Birth of Venus*, but this collection shows the "Figures of the Hours" as carved depictions of angels. An earlier one of these works shows two flame-shaped white wisps on either side of a raised (\*) spherical dome, which are all part of a palace made of clouds. In the third of them, a man clasps his hands in prayer in front of a whitewater ravine, and the first shows a laughing, pointing baby who just emerged from a cave. For 10 points, name this set of paintings which feature a man who is helped by a glowing Guardian Angel as he goes down a river and ages, by Thomas Cole.

ANSWER: Voyage of Life series

15. During cotranslational modification, this protein's N-terminal methionine is removed and the resulting N-terminal glycine is myristoylated by myristoyl-coA. This protein plays a role in synaptic plasticity by enhancing the activity of the NMDA receptor. This protein has been shown to inhibit the mitochondrial pathway of apoptosis by increasing the degradation rate of the BH3-only protein Bik, and this protein is an activator of the FAK-paxillin- p130-Crk-associated substrate cascade. The activation of this protein requires the removal of an inhibitory phosphate group from Tyrosine (\*) 527 near the C-terminus and the phosphorylation of Tyrosine 416 in the activation loop. Due to the loss of the C-terminal residues, its viral equivalent is no longer regulated by intramolecular interactions and becomes constitutively active; that viral equivalent was discovered to cause cancer in chickens by Peyton Rous. For 10 points, name this non-receptor tyrosine kinase encoded for by a namesake proto-oncogene.

ANSWER: Src tyrosine kinase (or "sarc"; accept c-Src or Src family kinase; prompt on "SFKs")

16. A poem of this type by Delmore Schwartz warns that “Like Moliere’s bourgeois gentleman, you may discover you have been speaking blank verse all your life.” One of these poems jokes about “peace and plenty, bed and board that chance employment can afford” and was written by Cecil Day-Lewis. Another of these poems says that others may “freeze with angling reeds / and cut their legs with shells and weeds,” inviting the addressee instead to swim naked in the river. The most famous poem of this type, which notes that “Philomel becometh dumb” and (\*) “time drives flocks from field to fold,” begins with the line “If all the world and love were young.” John Donne’s “The Bait” is one of these poems, the most famous of which was written by Sir Walter Raleigh. For 10 points, name this type of poem that often begins with the line, “Come live with me and be my love” in reference to a Christopher Marlowe poem.

ANSWER: responses to “The Passionate Shepherd to His Love” [or parodies of “The Passionate Shepherd to his Love”]

17. The author of this work asserts that he would write the word “Whim” on his door-frame while shunning “father and mother and wife and brother,” an illustration of his “doctrine of hatred.” This essay remarks that in great works of art “our own rejected thoughts...come back to us with a certain alienated majesty.” The author of this essay tells a cruel abolitionist to love his infant rather than “black folk a thousand miles off,” calls any dollar given to “the thousandfold Relief societies” a “wicked dollar,” and asserts, “Your (\*) goodness must have some edge to it--else it is none.” In this essay, a friend of the author suggests that the author’s impulses may be “from below,” to which the author responds that he would “live then from the Devil.” This essay compares society to a “joint-stock company” where “the virtue in most request is conformity.” For 10 points, name this essay claiming that “a foolish consistency is the hobgoblin of little minds,” a famous writing by Ralph Waldo Emerson.

ANSWER: “Self-Reliance”

18. This leader recounted his frustration with his regime’s lukewarm support from America in *Friends, Not Masters*. His government cracked down on the practice of insta-divorce via *talaq* in the Muslim Family Law Ordinance. He ruled during a period of strong economic growth called the Decade of Development. This president allowed his general, Akhtar Hussain Malik, to cross the Cease Fire Line, disguise his soldiers as locals, and try to foment rebellion in a neighboring country in Operation (\*) Gibraltar. Thomas Jefferson supposedly inspired a program he set up in which constituencies of 1000 citizens elected local governing boards, which then invariably voted for him; that was this man’s system of “basic democracies.” After Iskander Mirza declared martial law, this man rose to power by overthrowing Mirza. This man ceded power to President Yahya Khan after losing popularity over his failure to win the 1965 war over Kashmir. For 10 points, name this dictator of Pakistan from 1958 to 1969.

ANSWER: Mohamad Ayub Khan

19. A wise man in this text tells of a worker whose hand-balm saved a prince in battle to mock a friend who destroyed a giant gourd he could have turned into a raft. In another passage of this text, two gods try to repay a third who has no holes in his body by boring seven holes in him, but accidentally kill him. This text is divided into seven authentic “inner chapters,” fifteen “outer chapters,” and eleven “miscellaneous chapters.” (\*) Guo Xiang wrote the best-known commentary on this text, which includes various debates between Hui Shi and the title character, who argues for relativism by noting that he cannot know whether he is “actually” a man or an insect thinking he is a man. For 10 points, name this Daoist text most famous for describing its namesake’s “butterfly dream.”

ANSWER: the Zhuangzi

20. Joseph Fracchia and Richard Lewontin argue that it is useless to substitute this term for “history.” The extent of diffusion was used to argue against the reality of this process by Robert Lowie. Julian Steward rejected environmental determinism in formulating a multilineal theory of this process, and Marshall Sahlins divided it into specific and general types. The formula  $P=ET$  was proposed to describe this process in terms of an increase in energy consumption. That formula was proposed by Leslie White, who criticized Franz Boas’s rejection of (\*) orthogenetic approaches to this phenomenon. “Survivals” are left behind by this process according to Edward Tylor, while Lewis Henry Morgan argued that this process occurs through the stages of savagery, barbarism, and civilization. For 10 points, name this process through which cultures develop over time.

ANSWER: cultural evolution [or word forms; accept social evolution; or anything involving the evolution of society; prompt on “evolution” or “human evolution”; prompt on “cultural change” or similar answers]

21. This city is home to the Documentation Center, a museum designed by Günther Domenig to have a glass walkway cutting like a shard through its existing Congress Hall. This city was connected to Fürth by the first German railway, so Deutsche Bahn now has its museum here, and Schuco tin cars can be found in its Toy Museum. Visitors to this city may earn good luck by spinning the brass rings at the Schöner Brunnen and enjoy strictly even numbers of its tiny sausages. A March Field and the Tribune of Honours can be found at a gathering point in this chief city of (\*) Franconia, whose *lebkuchen* can be bought at its Christ Child Market. This city is also home to the Albrecht Dürer House and the historic Courtroom 600. For 10 points, name this city where the Rally Grounds were used for events recorded in *Triumph of the Will*, and in which Nazi war criminals were later put on trial.

ANSWER: Nuremberg [or Nürnberg]

1. Lord Palmerston said that only three people understood this diplomatic issue: “The Prince Consort, who is dead; a German professor, who has gone mad; and I, who have forgotten all about it.” For 10 points each:

[10] Name this issue disputed by Denmark and the German Confederation, which involved which country should own a pair of states between Germany and Denmark.

ANSWER: The **Schleswig-Holstein** Question

[10] After the Second Schleswig War, this agreement gave Holstein to Austria and Schleswig to Prussia. Since Austria now had a piece of land stuck between two Prussian-controlled blocks, war ensued.

ANSWER: the Convention of **Gastein** [or the Convention of **Badgastein**]

[10] Bismarck’s handling of the Schleswig-Holstein question earned him the respect of this hyper-nationalist *Reichstag* member and historian, known for his five-volume *History of Germany in the Nineteenth Century* and for originating the phrase “The Jews are our misfortune.”

ANSWER: Heinrich von **Treitschke**

2. This novel describes the last few months in the life of Elizabeth Booth, who along with her husband Paul has rented a house from a mysterious ex-CIA man and writer, McCandless. For 10 points each:

[10] Name this novel in which Paul is working as a media consultant for the Reverend Ude and cynically attempts to turn the accidental drowning of a child into a miracle that can be trumpeted around the globe for profit.

ANSWER: **Carpenter’s Gothic**

[10] The author of *Carpenter’s Gothic*, William Gaddis, was labeled “Mr. Difficult” in an essay this author wrote for the *New Yorker*. This contemporary author wrote the novels *Freedom* and *The Corrections*.

ANSWER: Jonathan **Franzen**

[10] Wyatt Gwyon forges Flemish paintings for Reckall Brown in this first novel by William Gaddis.

ANSWER: *The* **Recognitions**

3. A terminal amine can be synthesized together with a homologation by substituting this nucleophile and then reducing with lithium aluminum hydride. For 10 points each:

[10] Name this pseudohalide anion, whose copper salt allows a radical substitution of a diazo group on a benzene ring in the Sandmeyer reaction.

ANSWER: **cyanide** [accept **CN** minus]

[10] Cyanide is one of the strongest examples of this type of ligand, in which electron density is back-donated from the coordinated ion to the LUMO of the cyanide ion.

ANSWER: **pi-acceptor** ligand [prompt on “acceptor”; do not accept “pi-donator”, accept **pi-backbonding**]

[10] Pi bonding between a metal ion and cyanide stabilizes this lower energy molecular orbital for octahedral complexes, making cyanide a “strong-field ligand”. Stabilization of this degenerate orbital is also associated with the chelating ability of EDTA. For ligands with no pi-contribution, this orbital is nonbonding.

ANSWER: **t2g**

4. An earlier version of this painting was set in an oak wood, but open returning home to deforestation, the artist set the final version in a sparse landscape during a drought. For 10 points each:

[10] Name this painting which shows a red-haired priest and a hunchback boy walking at the front of a large crowd in Russia.

ANSWER: **Religious Procession in Kursk Province** [or **Krestnyy khod v Kurskoy gubernii**; or **Easter Procession in the District of Kursk** or **Religious Process in Kursk Gubernia**]

[10] This Russian painter of *Religious Procession in Kursk Province* often painted lower-class subjects, as in *The Volga Boatmen*.

ANSWER: Ilya Yefimovich **Repin**

[10] In this Repin painting, a bunch of ugly, laughing warriors stand around a table as one of their men pens an insult-filled letter to Mehmed IV.

ANSWER: the **Reply of the Zaporozhian Cossacks** [or the **Cossacks of Saporog Are Drafting a Manifesto**; or close translations]

5. This man names a phenomenon that can be seen in atmospheric wind passing by a volcano through satellite imagery. For 10 points each:

[10] Name this Hungarian-American researcher of aerodynamics, the namesake of a “street” of vortices that sheds from small obstructions such as cylinders to flows at transitional Reynolds numbers.

ANSWER: Theodore von **Karman**

[10] The shedding of vortexes in the von Karman vortex streets is dependent on this quantity, which is equal to the frequency of the shedding times the characteristic length of the obstruction all divided by the velocity.

ANSWER: **Strouhal** number

[10] von Karman vortex-induced vibrations are often modeled using this system when considering it coupled to cylinder motion. Relaxation oscillations were discovered in this system, which Lienard’s theorem shows must have a stable limit cycle.

ANSWER: **van der Pol** oscillator

6. Name some poems from the *Poetic Edda*, for 10 points each:

[10] The title trickster god of this poem kills Fimafeng, accuses Bragi of being “the most wary of war / and shiest of shooting” and then insults basically all of the Æsir before getting kicked out by Thor.

ANSWER: the **Lokasenna** [or **Loki's Quarrel**; or **The Flying of Loki**]

[10] Another poem from the Poetic Edda is the “Lay of” this god, who fathers Thrall, Karl, and Jarl, three men representing the three social strata.

ANSWER: **Rigr** [prompt on **Heimdall**]

[10] This second section of the Poetic Edda consists of Odin’s advice about pretty much everything. It recounts the story about Odin hanging himself from Yggdrasil to learn runes.

ANSWER: the **Havamal**

7. “Great beads of perspiration” appear on the brows of busts of twelve Roman emperors when they see the title character. For 10 points each:

[10] Name this novel in which the title character puts on an entrancing but bumbling magic act before causing the Duke to drown himself in the River Isis, prompting all but one of his peers to follow suit.

ANSWER: **Zuleika Dobson**

[10] This author of *Zuleika Dobson* wrote the short story collection *Seven Men and Two Others*, which contains “Enoch Soames.” He also wrote the collection *A Christmas Garland*, in which he parodied the style of many of his contemporaries.

ANSWER: Sir (Henry Maximilian) “Max” **Beerbohm**

[10] In this short story found in Beerbohm’s *Seven Men*, the narrator attempts to complete a ludicrous verse drama by the title playwright, in which the Guelfs and Ghibellines fight while Michelangelo and Benvenuto Cellini show up and Pippa passes.

ANSWER: “**Savonarola Brown**”

8. This work quotes Propertius's line "if powers fail, there shall be praise for daring" as part of the introduction of its author’s 900 theses. For 10 points each:

[10] Identify this “manifesto of the Renaissance” by Pico della Mirandola, which explains that man is capable of transcending the angels through pure contemplation.

ANSWER: **Oration on the Dignity of Man** [or **Oratio de Hominis Dignitate**]

[10] An occasional disputant of Mirandola, this other Renaissance thinker wrote the *Platonic Theology: On the Immortality of Souls*, which refutes Averroes with arguments taken from Aquinas.

ANSWER: Marsilio **Ficino**

[10] Renaissance philosopher Nicholas of Cusa is best known for coining this term to describe the attribute of a mind that has come to understand its infinite disproportion with the mind of God.

ANSWER: **learned ignorance** [or **docta ignorantia**]



9. This man co-founded the Institute of Noetic Sciences with investor Paul Temple, and wrote the foreword to the cult 1970s text *Ether Technology: A Rational Approach to Gravity Control*. For 10 points each:

[10] Name this ESP fan who attempted, but shockingly failed, to mentally transmit symbols like stars and wavy lines from space to the Earth.

ANSWER: Edgar **Mitchell**

[10] Ed Mitchell served as a Lunar Module Pilot, a position first held by this first American spacewalker who died in the Apollo 1 fire along with Roger Chaffee and Gus Grissom.

ANSWER: Edward **White**

[10] This Lunar module pilot recently punched moon landing denier Bart Sibrel in the face after being called a “coward and a liar” for claiming to be the second man to walk on the moon.

ANSWER: Edwin Eugene “Buzz” **Aldrin**

10. The renowned tea master Sen no Rikyū ordered the roof tile maker Tanaka Chōjirō to make tea bowls in this style, which his family has continued to do for over 450 years. For 10 points each:

[10] Name this style of pottery which uses coarse ground clay fired at low temperatures and removed from the kiln while hot. This style of pottery is traditionally used in the Japanese tea ceremony.

ANSWER: **raku** ware [or **raku** yaki]

[10] This potter from 19th-century England founded the Etruria works and designed a medallion with the legend, “Am I Not a Man and a Brother?” for the abolition movement.

ANSWER: Josiah **Wedgwood**

[10] In this style of Greek pottery painting, invented around 530 B.C., glaze was used to delineate the painted shapes while a slip was applied to the background; as a result, the painted figures stayed the color of clay, while the background turned dark.

ANSWER: **red-figure** vase painting

11. Imru al-Qays wrote the earliest of this set of poems, which are all in the *qasida* form he may have invented. For 10 points each:

[10] Name this set of seven pre-Islamic odes collected by Hammad al-Rawiyah, which were legendarily written in gold lettering and suspended from the *Ka'aba*.

ANSWER: the **Mu'allaqat** [or *Al-Mu'allaqat*; prompt on the **Suspended Odes** or the **Hanging Odes**]

[10] The *qasida* evolved into the *ghazal*, a form utilized by this Sufi poet who wrote his *Spiritual Couplets* in Persian.

ANSWER: Jalal ad-Din Muhammad **Rumi** [or Jalal ad-Din Muhammad **Balkhi**]

[10] This 12th-century Persian poet described a trip undertaken by thirty birds to find the Simurgh in his *Conference of the Birds*.

ANSWER: Farid ud-Din **Attar**

12. It can occur as a result of a population bottleneck, and the decline in fitness is caused by an unmasking of recessive alleles, for 10 points each:

[10] Name this phenomenon in which the offspring of related individuals show a decrease in vigor and survival rate.

ANSWER: **inbreeding depression**

[10] This other evolutionary phenomenon occurs when a proportion of the population dies before expressing a phenotype. It is illustrated by male deer with large antlers, as the energy cost of a trait cancels out its mating advantage thus keeping antler size in the population constant.

ANSWER: **invisible fraction**

[10] One way some birds and lizards overcome the invisible fraction is by producing more offspring. This is the term given to the number of eggs produced at a single time. It is generally higher in organisms with shorter lifespans.

ANSWER: **clutch** size [accept equivalents for “size”]

13. The ten *sefirot* are described in the central text of this school, the *Zohar*. For 10 points each:

[10] Name this mystical branch of Judaism.

ANSWER: **Kabbalah**

[10] Often used by Kabbalists, this Jewish system of assigned numbers to letters, words and phrases can be employed to ascertain the relationships between various phrases.

ANSWER: **Gematria**

[10] Rabbi Isaac Luria added this doctrine to Kabbalah. According to this doctrine, God had to contract his light to leave space for creation, thereby also allowing for the existence of evil.

ANSWER: **tzimtzum** [or **zimzum**]

14. György Ligeti used four of these instruments in his *Hamburg Concerto*, and players of it can produce pitches outside of the harmonic series by hand-stopping. For 10 points each:

[10] Name this valveless ancestor of a modern brass instrument. It was played by Joseph Leutgeb, for whom Mozart wrote four concertos.

ANSWER: **natural horn** [prompt on partial answer]

[10] This composer called for a natural rather than valved horn in his Horn Trio, which was written to commemorate the death of his mother. He also composed *A German Requiem*.

ANSWER: Johannes **Brahms**

[10] The horn part in this song cycle by Benjamin Britten makes extensive use of natural harmonics. It includes a setting of the “Lyke-Wake Dirge,” and it was premiered in 1943 by Peter Pears and Dennis Brain.

ANSWER: **Serenade for Tenor, Horn, and Strings**

15. Answer the following on science loosely associated with the once-ubiquitous British restaurant and café chain, J. Lyons [“lions”] & Co, for 10 points each.

[10] The young chemist Margaret Roberts got married and became Margaret Thatcher while developing soft-serve ice cream for Lyons. While at Oxford, Roberts had worked on this unrelated physical technique under the supervision of Dorothy Hodgkin, who used it to discover the structure of insulin.

ANSWER: **X-ray crystallography** (or **X-ray diffraction**)

[10] Lyons operated a Royal Ordnance Factory during the Second World War, where mostly female workers would fill bullets and shells with this smokeless low explosive propellant, made of drawn rods of nitroglycerine mixed with guncotton.

ANSWER: **cordite**

[10] Lyons’s best claim to fame may be this machine installed in its offices in 1951. Developed from research at the University of Cambridge, this was the first digital electronic computer used in a private commercial setting.

ANSWER: **LEO I** (or **Lyons Electronic Office**)

16. These forests are home to a species of frog where the tadpoles develop in the mouths of the males, and the kodkod, the smallest cat species in the Americas. For 10 points each:

[10] Name this broadleaf and mixed temperate rainforest that covers coastal areas of the Andes including the fjordlands of the Gulf of Ancud and the Chonos archipelago.

ANSWER: **Valdivian** temperate rainforest

[10] This former whaling centre and largest island on South America’s Pacific coast is partly covered with Valdivian temperate rainforest, much of which is within a private reserve owned by Chilean president Sebastian Piñera.

ANSWER: Greater **Chiloé** [or Isla Grande de **Chiloé**]

[10] The Valdivian forests are home to a number of these geological features, most notably Corcovado and Yanteles. Often found in subduction zones, they are characterized by their steep, concave profiles and eruptions with a high silica content.

ANSWER: **stratovolcanoes** [prompt on “volcano”]

17. This company founded Batavia on the site of present-day Jakarta. For 10 points each:

[10] Name this trading company, the first to sell stock, which controlled modern Indonesia and competed with a similar company from England.

ANSWER: Dutch East India Company [or the VOC]

[10] The Dutch East India Company lost control of Formosa after its defeat by this Ming general. This general reconquered China from the Manchus.

ANSWER: Koxinga [or Zheng Chenggong]

[10] Long before the Dutch turned up on the island, the Javanese king Raden Wijaya founded this Hindu empire after defeating the Mongols. This empire ruled most of the modern Indonesian archipelago before it collapsed from civil war.

ANSWER: Majapahit Empire

18. This play tells the story of a Christian slave raised in the palace of the Sultan of Jerusalem, Orosmane. For 10 points each:

[10] Name that play in which the title character's betrothal to a Muslim proves shocking to her brother, Nérestan, and her father, Lusignan.

ANSWER: Zaïre

[10] This French philosophe, the author of *Zaïre*, also wrote *Zadig* and parodied Leibniz as the optimistic Dr. Pangloss.

ANSWER: Voltaire [or Francois-Marie Arouet]

[10] Voltaire's famous quote, "If God did not exist, it would be necessary to invent him" comes from his epistolary response to this text. This anonymous text, probably written by John Toland, argues that Moses, Jesus, and Muhammad are the title charlatans.

ANSWER: *Treatise of the* Three Impostors [or *Traite des* Trois Imposteurs]

19. This pioneer of postcolonialism cited Michel Cournot's determination that "Four Negroes with their penises exposed would fill a cathedral," leaving them "unable to leave the building until their erections subsided" before concluding that "the Negro is a penis." For 10 points each:

[10] Name this thinker who wrote *The Wretched of the Earth* in addition to writing about male members in *Black Skin, White Masks*.

ANSWER: Frantz Fanon

[10] In *Black Skin, White Masks*, Fanon discussed and critiqued the conception of this complex, which Octave Mannoni defined as a paternalistic desire to control natives suffered by white colonizers.

ANSWER: the Prospero complex

[10] In *The Wretched of the Earth*, Fanon argued that revolutions could be assisted by this social class, which Marx defined as the thieves, beggars, and vagabonds who made up the lowest fraction of the lowest class.

ANSWER: the lumpenproletariat [prompt on proletariat]

20. On seeing the passage of Queen Anne, this poor farmer was asked, "Have you ever seen such a sight before?" and replied "Never since I sat in her chair." For 10 points each:

[10] Name this man who fell out with Major-Generals Charles Fleetwood and John Disbrowe, then resigned as Lord Protector of England, a post originally held by his father.

ANSWER: Richard Cromwell, the Lord Protector [or Tumbledown Dick; prompt on Cromwell]

[10] In the chaos after the resignation of Richard Cromwell, this general marched into London, summoned a Convention Parliament, and lent his support to Charles II's Declaration of Breda, thus enabling the Restoration.

ANSWER: George Monck, 1st Duke of Albemarle [or George Monck, 1st Duke of Albemarle]

[10] In the Declaration of Breda, Charles asked for the English throne, offering to direct Parliament to effect religious toleration, a settlement of property disputes, payment to Monck's army, and *this* most important condition.

ANSWER: amnesty for crimes committed during the Interregnum [or forgiveness of crimes against the Monarchy; or a pardon]

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ANSWER: **LEO I** (or **Lyons Electronic Office**)

22. When MC Shan implied that "hip-hop had its start out in Queensbridge", Boogie Down Productions rapped that "if you popped that junk up in" this borough, "you might not live." For 10 points each:

[10] Name this New York borough where DJs like Kool Herc started hip-hop "out in the park" in the 1970s.

ANSWER: the **Bronx** [or **South Bronx**]

[10] This Bronx MC from Boogie Down Productions worked with DJ Scott La Rock to diss MC Shan on *Criminal Minded*. Scott's death caused this MC to lead the drive for social consciousness in rap in tracks like "Stop the Violence."

ANSWER: **KRS-One** [or Lawrence Krisna **Parker**; prompt on "the Teacher"]

[10] This South Bronx MC stated that "from Hunts Point to Co-op / we invented hip-hop" on his album *BX Warrior*. More notably, he kicked off the East Coast-West Coast beef by dissing NWA in 1991 with his track "Fuck Compton."

ANSWER: **Tim Dog** [or Timothy **Blair**]

23. *Numerical Recipes* states that all persons found guilty of malpractice in the evaluation of these functions will be "summarily executed, and their programs won't be!" For 10 points each:

[10] Name these mathematical functions whose evaluation requires a total number of multiplications equal to the function's degree.

ANSWER: **polynomials**

[10] The modified Lentz's method can be used for evaluation of these related functions used to formalize the quality of Diophantine approximations. Euler produced a formula to derive these functions from sums of products like Taylor series.

ANSWER: **continued fractions** [prompt on "fractions"]

[10] This general method for finding the roots of polynomial equations, named for a French mathematician, competes with the Jenkins-Traub method. It assumes that all roots are equidistant from a guess in the complex plane, with the exception of the one root currently being sought.

ANSWER: **Laguerre**'s method

## UNUSED QUESTIONS

This author was the subject of the first book published by Stanley Fish. He wrote the lines “*Pla ce bo! / Who is there, who? / Di le xi! / Dame Margery / Fa, re, my, my. / Wherefore and why, why?*” in a poem celebrating a mock mass for Jane Scrope’s sparrow, killed by a Carrow Abbey cat. In addition to “Philip Sparrow” he wrote the ponderous handbook of princely perfection *Speculum Principis*, and gave his name to a short verse form of irregular metre with two or three stresses. David Norbrook has drawn attention to this author as a pioneer of Protestant humanism, considering lines like “The Rose both white and Rede / In one Rose now dothe grow.” Edmund Spenser’s *The Shepheardes Calendar* re-used a character created by this author to attack clerical abuses, Colin Clout. This author of “A Lawde and Prayse Made for Our Sovereigne Lord the Kyng” and the satire “Speke, Parrot” was considered by Erasmus to be the English equivalent of Homer and Vergil. For 10 points, name this poet laureate and tutor of Henry VIII who attacked Cardinal Wolsey in “Why come ye not to Court?”

ANSWER: John Skelton

In this poem, the speaker encounters a river “as unexpected as a serpent comes” that is bordered by “low scrubby alders.” That river “might have been a bath” for “a stiff blind horse, his every bone a-stare,” that the narrator previously encountered. That horse prompts the narrator to say “I shut eyes and turned them on my heart” and “asked on draughts of earlier, happier sights.” Fearing that “here ended, then / progress this way” the narrator “in the very nick / of giving up” realizes that “This was the place!” Two stanzas preceding the last begin with “Not see?” and “Not hear?” This poem opens with the narrator receiving advice to go “into that ominous tract” from a man whom the narrator suspected of lying “in every word, that hoary cripple.” In its final section the narrator, having completed his quest, says “Dauntless the slug-horn to my lips I set, / And blew.” For 10 points, name this Robert Browning poem whose title is perhaps drawn from a line in *King Lear*, about a knight in search of an obscure turret.

ANSWER: “Childe Rolande to the Dark Tower Came”

A namesake “moss” was observed on the surface of this object studied by the Yohkoh telescope, and RHESSI later observed hard X-ray loops in a three-phase pattern on this object. Faculae on the surface of this object include “plages” [PLAHJ-iz]. The 2012 IBEX experiment suggested that this body’s velocity compared to the interstellar medium means it lacks a true bow shock, despite its having a magnetosphere, which takes the form of a Parker spiral. Supergranulation occurs on the surface of this object which undergoes Carrington rotation. Results from the Sudbury experiment were first thought to discredit theories of the structure of this object, but were instead due to flavor oscillation of neutrinos. The intensity of cool, magnetically active depressions on this object’s surface changes in namesake “cycles.” For 10 points, name this nearby astronomical object that emits flares and has namesake “spots.”

ANSWER: the Sun [or Sol; accept solar moss]

This leader of the King’s American Dragoons defeated Archibald Macdonald at Wambaw Bridge, and after he left his garrison on Long Island in order to study gunpowder explosions for the Royal Navy, he observed that a cannon gained more heat from being fired when no cannonball was shot. This inventor designed a fireplace that let far less smoke into the room, following his discovery of convection currents while investigating the warmth of different clothing types for the Elector of Bavaria. This scientist later found frictional heating to be inexhaustible and invented a theory of heat as motion, replacing the caloric model. After founding the Royal Institution in London, this man appointed Humphry Davy as its chief scientist. For 10 points, name this British loyalist in the American Revolution, an adventurer and chief founder of modern thermodynamics.

ANSWER: Benjamin Thompson, Count Rumford (accept either name or title)

One character in this novel attempts to grind a perfectly spherical ball in order to conduct his research on frogs. Another character in this novel frequents the local bathhouse but on being followed there he is found to be flustered and frustrated by younger attendees; that same character is bothered by the students of the Hall of the Descending Cloud that keep climbing over the fence into his back garden. One character in this novel tries eating jam every day as a cure for his poor digestion; that man also writes an elegy for a deceased mathematician called the “Spirit of Japan.” One character well known for having a hilarious topknot hairstyle and carrying an iron fan is the uncle of a man who claims that peacock tongue is a delicacy in the west. A man who insists on pronouncing his first name in order to make it rhyme with his last name, Beauchamp Blowlamp, writes a volume of poetry dedicated to Opula

Goldfield, who is at one time engaged to Avalon Coldmoon. The madcap Waverhouse is a perpetual guest of Mr. Sneaze in this novel. For 10 points, name this feline work of Natsume Sōseki.

ANSWER: *I Am a Cat* (or *Wagahai wa neko de aru*)

Answer some questions about South African short stories, for 10 points each.

[10] This title story of a collection tells of a mission to kill a man called Baden-Powell. On the way, soldiers lose faith in their commander after he has to ask black men for directions. Stephanus Van Barnevelt explains that he would risk court-martial and refuse to return to the title location of this short story, unless it also meant surrendering to the English.

ANSWER: “Mafeking Road” [pronounced Mah-fe-king]

[10] “Mafeking Road” is by this author of *Jacaranda in the Night* who was put on death row for shooting and killing his stepbrother during an argument. He told the story of his time in prison in *Cold Stone Jug*.

ANSWER: Herman Charles Bosman

[10] This contemporary South African Nobel Prize winner published the short story collection *A Soldier's Embrace*, but is better known for novels such as *The Conservationist*.

ANSWER: Nadine Gordimer

One battle in this conflict featured the cutting of a chain to gain entrance to a harbour followed by an amphibious assault by a hundred usciere [ooh-shee-AIR-ay]. Nicetas Choniates provided an eyewitness account of that event in this conflict in which he described a harlot enthroned in the patriarch's chair singing bawdy songs. One leader in this conflict had his longevity attributed to his earlier act of rescuing the bones of Saint Lucy. The main primary source for this conflict is the account of Geoffrey of Villehardouin, and it began after the bull “Post miserabile” led to preaching at a jousting tournament. One leader in this conflict died soon after as the prisoner of Tsar Kaloyan, and Simon de Montfort the elder deserted before a sack during this conflict by an army later led in a siege by the nonagenarian Enrico Dandolo. The Dalmatian city of Zara fell during this conflict in which the Doukas family deposed Alexios IV Angelos soon after his coronation. For 10 points, name this conflict in which the Christians, led by Baldwin of Flanders and Venice, sacked Constantinople.

ANSWER: the Fourth Crusade

Veit Valentin observed that this artiste had “the tigerish vivacity that inspires the Andalusian dance” and she was denounced as an Irish imposter by Lord Ranelagh at a disastrous theatrical appearance. This performer of the “Spider Dance” horsewhipped the editor of the *Ballarat Times* after a bad review during the Australian gold rush. This woman was the mistress of the journalist Alexandre Dujarier, who died in a duel, and she ended her life as a lecturer in American on the morality of beauty and fashion. When asked by a European monarch “Nature or art?”, she cut open her blouse with a stiletto. This woman opposed the Ultramontanes under Carl von Abel, but her Protestant reform failed after fighting between her loyal Alemannia group and traditional groups of Munich university students, leading to her lover's abdication in favour of Maximilian in the March Revolution of 1848. For 10 points, name this Countess of Landsfeld who governed Bavaria as the mistress of Ludwig I.

ANSWER: Lola Montez (or Maria Dolores Eliza Rosanna Gilbert; accept Countess of Landsfeld until mentioned)

In a depiction of this event in the cupola of the cathedral at Parma, the central figure cannot be seen from the ground but is visible from the choir; that work was painted by Correggio. A Neo-Stoic depiction of this scene includes an Egyptian obelisk in the central background, to the right of a tree that forms part of a zigzagging landscape. The reverse of another depiction of this scene shows a grayscale crucifixion and a pelican feeding her young, while in the background of the main scene, ships are burning in a river. The single human figure in the Poussin work on this subject is seated among Greco-Roman ruins, whereas another work shows him clad in pink, at the centre of a diagonal that joins a vision of the Madonna and Child to a metal-armoured demon in the bottom right; the latter aims to steal the central character's writing instruments, which are guarded by an eagle. For 10 points, name this event painted by Hieronymus Bosch in which God appeared to an evangelist on a certain Greek island.

ANSWER: the Revelation of (or, Vision of, or Landscape with) St. John (the Divine/Evangelist) on Patmos

John Huizenga has argued that this equation was mistakenly applied by one University of Utah researcher to reach an erroneous conclusion about deuterium fugacity in the Pons-Fleischmann experiment. This equation yields the Henderson equation for ITIES devices when comparing two points either side of a liquid-liquid interface. One device applying this equation to analysis is named for Harned [HAR-nid] and uses a system containing both metallic

silver and silver chloride to measure pH. This equation depends on a constant which is converted from “standard” to “formal” when activity coefficients are factored out of that term, and Butler-Volmer equation reduces to this equation under the condition of zero current. This equation results from dividing the expression for the Gibbs energy of a reaction in terms of its equilibrium constant by units of molar charge, and the “formal” type of this equation is expressed in terms of a reaction quotient. For 10 points, name this master equation of electrochemical thermodynamics that gives the EMF of an electrochemical cell.

ANSWER: Nernst equation

This composer began one work with the right hand playing thirty-second notes fluttering between F augmented, G major and C# minor triads, and he structured the seventh *Prelude* as “strophe-antistrophe-epode.” One pianist found the final flourish of this composer’s *Fantasia Burlesque* so banal that she couldn’t bring herself to play it. This composer’s *Four Studies in Rhythm* uses themes from New Guinea and serially assigns each pitch in each of three rows its own duration, dynamic and mode of attack. Thirty themes are explored in three couplets, with the pianist cross-handed after a six part canon, in a work in which this composer used Hindustani rhythms. Paul Griffiths said this composer indulged in “ever splashier paroxysms of cheapened harmony” in a work for two pianos where bell-like chords represent paradise. This composer of *Cantéyodjayâ* and *Visions of the Amen* described the sixth movement of one piece as “the big bang” and a fugue in that movement reassembles to the leitmotif “the theme of God.” Other movements in that work include “I sleep, but my heart keeps watch,” “Contemplation of the Awesome Anointing” and “Contemplation of the Star,” and it was written for the composer’s wife, Yvonne Loriod. For 10 points, name this composer of *Vingt regards sur l’enfant-Jésus*.

ANSWER: Olivier Messiaen