

TOSSUPS

1. If X and Y are both these constructs, then the Lie bracket of X and Y is also one of these things, which can be defined as sections of tangent bundles. Every one of these constructs on a compact manifold is complete. Varieties of these constructs that preserve their metric on a Riemannian manifold are named for (*) Wilhelm Killing. The Kelvin-Stokes theorem relates a line integral over one of these constructs to the surface integral of its curl. For 10 points, identify these constructs which assign a direction and magnitude to each point in a space.

ANSWER: vector fields [prompt on fields; accept Killing fields until “Killing” is read and anti-prompt after]

2. This character irritates his wife by frequently quipping, “going to buy that gold brooch for you, girl,” and owns an oft-vandalized Royal Enfield bike. He is beaten severely after pouring a plate of food on a character he refers to as “the young god.” He quits his job at the *Sentinel* while living in (*) Port-of-Spain with a contingent of his in-laws who had previously lived at the Hanuman House. At age seventeen, this character marries Shama, the daughter of Ms. Tulsi. For 10 points, identify this character that vies for the title “house” in a novel by V. S. Naipaul.

ANSWER: Mohun Biswas [accept either]

3. Several Giorgio de Chirico paintings include a marble statue of this figure reclining, reminiscent of a Hellenistic sculpture of this figure wearing a *chiton* with one breast exposed. In another painting, this figure stands clothed in blue, red, and white strips of fabric above an urn bearing the artist’s signature and below a crown of stars representing the constellation (*) Corona. In that painting, a god cloaked in pink jumps out of a chariot pulled by cheetahs towards this figure. For 10 points, name this figure depicted stranded on Naxos alongside Bacchus by Titian.

ANSWER: Ariadne

4. The phrase “every key has ridges” is a famous response to the idea that *this action* is the key to paradise. Truthfulness, love, and certainty are three of the seven requirements for this action to be valid. This action is often referred to as *kalima* in South Asia. The second part of this action is an acknowledgment of (*) prophethood, or *risalah*. The flag of Saudi Arabia features the words said during this action, whose first part is a creed affirming *tawheed*. Converts to Islam perform - for 10 points - what testimony of the oneness of God?

ANSWER: (reciting/performing) Shahada [accept conversion to Islam until “second part” and *prompt thereafter*; prompt on testimony or profession of faith]

5. Burials of whiskey were placed at regular intervals along this project to encourage the workers constructing it. The land on which this project was built was surveyed by James Geddes. Nostalgia for the use of mules on *this* is expressed in Thomas Allen’s song (*) “Low Bridge.” Gouverneur Morris advocated this project, which was given \$7 million in funding over eight years and used the Mohawk Valley as a path. DeWitt Clinton initiated - for 10 points - what project that linked the Hudson River to a namesake Great Lake?

ANSWER: Erie Canal

6. A parameter classifying these entities is the tangent of slope divided by square root of H over L . That parameter, the Iribarren number, describes the runoff of these entities. Luke’s variational principle describes the motion of these things, and for long, weakly non-linear ones, the Boussinesq approximation is more appropriate than the (*) Stokes expansion. Particles in them move in circular motion with radius decreasing toward their base. Those caused by tides are called bores. For 10 points, name these often wind-caused phenomena on water surfaces, exemplified by tsunamis.

ANSWER: water waves [or wind waves; or surface waves; or gravity waves, but don’t accept “gravitational waves”]

7. This thinker once quipped: “If the only tool you have is a hammer,” it is tempting “to treat everything as if it were a nail.” Clayton Alderfer expanded on this thinker’s work with a theory that focuses on Existence, Relatedness, and Growth. This psychologist used the definition: “moments of (*) highest happiness and fulfillment” to describe “peak experiences,” and he placed safety and belonging on a construct that peaks with self-actualization. For 10 points, name this American psychologist who devised the “hierarchy of needs.”

ANSWER: Abraham (Harold) Maslow

8. A noise that this novel’s protagonist perceives as “someone being sacrificed” turns out to be a young boy bound to a wall. This novel’s protagonist is called a “Magyar Maiden” by a socialite that purchases this character’s mother’s hat for \$15 while at the (*) *Night of Joy* bar. The protagonist of this novel barely holds a job selling hot dogs at Paradise Vendors and later runs off with Myrna Minkoff. For 10 points, name this novel about the intellectual slob Ignatius J. Reilly, written by John Kennedy Toole.

ANSWER: *A Confederacy of Dunces*

9. A man with this surname described using water to break rock walls at mines at Las Medulas he learned while procurator of Spain, a position he may have gotten thanks to his friend Titus, and witnessed the building of the Domus Aurea. Another man with this surname discussed giving three chances to recant before executing (*) Christians in a letter to Trajan. The *Epistulae* of one man with this surname tells of how another said “fortune favors the bold” and took his boat near Vesuvius. For 10 points, give this surname of the author of the *Naturalis Historia*.

ANSWER: Pliny [or Plinius]

10. Pairs of these particles are emitted in the major pathway for iron-45 decay. The delta-plus-plus particle commonly decays to a positive pion and one of these particles. Quantum tunneling by these particles is the dominant process in the (*) Grotthuss mechanism at low temperatures. The “spin crisis” exists because these particles’ spin is not accounted for by the spin of their constituent quarks. These particles are the main constituents of cosmic rays. One down quark and two up quarks compose - for 10 points - what particles found with neutrons in atomic nuclei?

ANSWER: protons

11. The moon goddess of these people witnessed so much adultery at night that she begged to instead be the goddess of the sun. The mythos of these people includes an enormous trout that swallows and spits out the oceans to generate tides. These people appeased the gods by eating the flesh of a certain animal to liberate its spirit in the (*) *iomante* ceremony. These people revered the sea deity Repun and other spirits called *kamuy*, and would make yearly bear sacrifices to Kim-un. 10 points, name these indigenous hairy people of Hokkaido.

ANSWER: Ainu people

12. This writer published, but soon thereafter disowned, a sequel to David Lindsey’s novel *A Voyage to Arcturus* titled *The Flight to Lucifer*. This writer included kenosis, askesis, and apophrades among six “revisionary ratios” that affect the *agon*, or the process by which writers deal with the pressure of their (*) predecessors. In another work, this writer argued against the “School of Resentment” and promoted a purely aesthetic form of literary criticism. For 10 points, name this author of *The Anxiety of Influence* and *The Western Canon*.

ANSWER: Harold Bloom

13. This musician added English lyrics to a traditional Mexican song with his 1935 recording of “La Cucaracha.” Heavy marijuana use inspired the song “Muggles” by this musician who, with Bobby Darin, popularized “Mack the Knife” as a jazz standard. This musician’s (*) Hot Five band recorded “West End Blues”, a song by this musician’s mentor, “King” Oliver. Songs like “Heebie Jeebies” showcased this musician’s “gravel-voiced” scat singing. For 10 points, name this trumpeter nicknamed “Satchmo” known for “What a Wonderful World.”

ANSWER: Louis Armstrong [accept Satchmo until it is read]

14. Marco Rubio's *American Dreams* dedicates a chapter to "making America safe" for this company, whose business model skirts legal requirements of "certificates of public necessity and convenience." This company, whose chief lobbyist is ex-Obama strategist David Plouffe, mocked a mayor who opposes it by adding a feature which always shows 25 minute (*) wait times named for Bill de Blasio. California courts ruled that this company could not classify its employees as independent contractors. For 10 points, name this largest ride-sharing company.

ANSWER: Uber

15. When one character with this name is told that he will never be happy so long as he is poor, he murders the rich cripple Roland for his money. While in prison, another character with this name reads a newspaper clipping about a Czech murder. The 2015 Prix Goncourt for first novel was awarded to a Kamel Daoud work titled for this character's (*) "Investigation." In a different work, a character with this name joins Raymond Sintes at the beach and shoots a knife-wielding Arab five times. For 10 points, give this name of the narrator of Albert Camus's *The Stranger*.

ANSWER: Meursault [accept "Patrice Meursault" during the first sentence]

16. In this city, Sterling Archer tells Woodhouse that poaching eggs is "eggs 101." In the first season of *Archer*, this city is home to a gay bar known as *The Cockfight*, while in the fifth season, Sterling travels to this city in an attempt to sell twenty pounds of cocaine to the (*) hitmen Charles and Rudy. On a different show, a resident of this city frequently sails offshore aboard his boat *Slice of Life* to toss black trash bags into the ocean. A Showtime series about the serial killer Dexter was set in - for 10 points - which coastal city in Florida?

ANSWER: Miami

17. An early name for these people was derived from their adherence to the Monarchian Athinganoi sect. Ferdinand VI of Spain ordered the "Great Round-Up" of these people in Spain. Because the names of different groups of these people reflect their occupations, those names may have originated with the (*) caste system. This group, which may have followed the Mongols into Europe, uses a wheel as its national flag, which reflects traditional life in wagons. India was probably the original homeland of - for 10 points - what poor nomadic people of Europe?

ANSWER: Roma people [or Romani; or Gypsies]

18. This number divides the mean squared end-to-end separation of a linear polymer to give the square of the radius of gyration. Unstable reagents like butyl-lithium are often stored in a mixture of hydrocarbons with this many carbon atoms. The reaction of acetyl coA and oxaloacetate generates a molecule with this many carbons. This is the denticity of (*) EDTA. Mannose and citric acid have this many carbon atoms. A ring with this many carbon atoms can display boat or chair conformations. For 10 points, how many carbon atoms are in benzene?

ANSWER: six

19. This instrument is the only woodwind in Joseph Haydn's "Philosopher" symphony. This instrument, which is frequently extended so that it can play a low B-flat, is naturally pitched in F. A solo for this instrument representing the voice of Harry Burleigh was adapted into the song (*) "Goin' Home." This instrument represents a bird in Jean Sibelius' *The Swan of Tuonela* and plays a solo in the "Largo" section of the "New World" symphony. For 10 points, name this double-reed relative of the oboe.

ANSWER: English horn [or cor anglais; do not accept "horn" or "French horn"]

20. In this country, a site at Chan Chan is found near the city of Trujillo. Despite the city's population of nearly half a million, flying is practically the only way to get to *this country's* city of Iquitos. The world's second deepest canyon, found in this country, is formed by the Colca River and can be accessed from (*) Arequipa. In this country, a "trail" up the Sacred Valley of the Urubamba River leads to a ruined city visited by Hiram Bingham. For 10 points, name this country where tourists visit ruins at Machu Picchu.

ANSWER: Republic of Peru [or República del Perú]

21. A bullshitter in this novel tells the narrator that all chess pieces move in an L-shape. Another character in this novel is told his elbow will “unzip” after he visits nurse Crow Face. That character is upset when his shirt is muddied while playing soccer and later helps the narrator find a cassette tape in (*) Norfolk. The narrator discovers that “deferrals” were mere rumors in a conversation with a former teacher from Hailsham. For 10 points, name this dystopian novel about carer Kathy H and organ donors Ruth and Tommy, written by Kazuo Ishiguro.

ANSWER: *Never Let Me Go*

22. A maxim from one of Jacques Lacan’s seminars states that the desire of *this concept* is the origin of man’s desire. This concept becomes “infinite in negating its own finitude” according to *Totality and Infinity* by Emmanuel Levinas, which says that interactions with it are ethical if they are (*) “face to face.” Simone de Beauvoir identified women, in contrast to the male subject, as the “privileged” variety of this concept. For 10 points, identify this concept of an identity that differs from the norm or self.

ANSWER: The Other [or Constitutive Other]

23. People of this culture built a religious center containing the massive Hall of Columns called Mitla. A famous turquoise skull was found in the re-used burial place of Tomb 7 at a site built by this culture, which produced hundreds of sculptures of male nudes with glyphs between their legs called *danzantes*. The chief god of this culture was the (*) thunder god Cocijó. These people made their capital at a site named for white trees on a hill, Monte Albán. Benito Juárez belonged to - for 10 points - what ancient ethnic group centered in Oaxaca?

ANSWER: Zapotecs [or Zapotecas; or Be’ena’a; or Be’ena Za’a]

24. They’re not leaf veins, but this tissue’s structure can be classified into parallel or pennate types, the latter of which has larger physiological cross-sectional area. In the Cahill cycle, amino groups are transported from this tissue to the liver in the form of alanine. The largest known (*) protein in humans, titin, is found in this tissue. Invaginations of the plasma membrane of its cells are termed T-tubules. Cells of this tissue sequester calcium ions in the sarcoplasmic reticulum. For 10 points, name this tissue that contracts and relaxes when you lift weights.

ANSWER: muscle [accept skeletal muscle or striated muscle; don’t accept other kinds of muscle]

BONUSES

1. Answer the following questions about the Pagan Kingdom of medieval Burma, for 10 points each.

[10] This first great Burmese leader made Pagan his capital and united the Irrawaddy river valley. He converted to Theravada Buddhism under the guidance of the monk missionary Shin Arahan.

ANSWER: **Anawrahta** Minsaw

[10] The Pagan kingdom's extensive missionary activity included helping re-establish the Buddhist tradition in this island, which had been conquered by the Chola dynasty.

ANSWER: **Sri Lanka** [or **Ceylon**]

[10] The Pagan kingdom's demise was brought about by an expedition ordered by this Mongol ruler, who had other foreign ambitions stymied by *kamikaze* winds. His court at Shangdu was visited by Marco Polo.

ANSWER: **Khubilai** Khan [or **Kublai** Khan; or Yuan **Shizu**]

2. Potassium cyan-oxalate becomes an electrical insulator due to the occurrence of this phenomenon. For 10 points each:

[10] Name this phenomenon which can be considered the analogue of the Jahn-Teller distortion for 1D crystals.

ANSWER: **Peierls** distortion [or **Peierls** transition]

[10] A polymer of this simplest alkyne is an insulator in its pure form due to a Peierls distortion. This compound is burned in the presence of oxygen to produce a flame for welding.

ANSWER: **acetylene** [accept **ethyne**]

[10] Landau and Peierls argued that this two-dimensional lattice of carbon atoms could not exist because it would melt due to thermal fluctuations. This allotrope was isolated with the use of scotch tape.

ANSWER: **graphene**

3. The inner sanctuary of this building is referred to as the Holy of Holies. For 10 points each:

[10] Identify this building, the construction of whose first incarnation is credited to Solomon.

ANSWER: The **Temple** in Jerusalem [or **Bet haMikdash**; or **Beit al-Quds**]

[10] The Temple Mount is partly surrounded by this structure, which visitors often slip prayer notes into. This structure's nickname comes from the mourning of the Temple's destruction.

ANSWER: **Western Wall** [or **Wailing Wall**]

[10] This prayer originated as a congregational response when it was said at services at the Temple. Observant Jewish parents traditionally teach their children to say this prayer at night before they go to sleep.

ANSWER: **Shema** Yisrael [or **Sh'ma** Yisrael]

4. When a model leaves out relevant factors, it has the "omitted variable" type of this problem. For 10 points each:

[10] Identify this problem in statistical research, which occurs when an estimator consistently differs from the expected value. It also refers to a partial perspective, often said to be liberal for news media.

ANSWER: **bias**

[10] This technique attempts to eliminate selection bias by observing the effect of a treatment on a dependent variable. It compares the values for the variable at two different times: before and after treatment.

ANSWER: **difference in differences** analysis [or **DID** analysis]

[10] Card and Krueger used DID analysis to study effects of minimum wage changes in New Jersey and Pennsylvania. The policy change can be considered an example of this kind of experiment, in which the treatment and conditions are not controlled by researchers, but approximate randomization.

ANSWER: **natural** experiment

5. [NOTE TO MODERATOR: Do not reveal the full answer for the first part.]

When one character in this scene remarks: "Hot day," another character tersely replies: "Seen worse." For 10 points each:

[10] Name this scene set near Bus Stop 41. This scene supposedly inspired several of the James Bond helicopter chases, and John Patterson described the film in which this scene appears as "the first Bond film."

ANSWER: the **crop duster** scene from *North by Northwest* [accept equivalents mentioning **crop dusting**]

[10] The crop duster scene appears in this thriller. In a suspenseful scene in this film, Cary Grant and Eva Marie Saint's characters hang precipitously from a ledge on the face of Mount Rushmore.

ANSWER: **North by Northwest**

[10] This "Master of Suspense" directed *North by Northwest*. This director's other films include *Psycho* and *Rear Window*.

ANSWER: Sir Alfred (Joseph) **Hitchcock**

6. This noise is likened to the sound a “watch makes when enveloped in cotton.” For 10 points each:

[10] Identify this sound, first described as a “ringing,” but which gradually grows louder and louder and louder.

ANSWER: the **beating** of the old man’s **heart** from “A Tell-Tale Heart” [accept equivalents describing the sound a heart makes]

[10] A vulture-eyed old man and his heartbeat drive the narrator mad in this author’s story “The Tell-Tale Heart.” The motif of creatively hiding bodies recurs in his stories “The Black Cat” and “The Cask of Amontillado.”

ANSWER: Edgar Allan **Poe**

[10] The hypersensitive narrator of Poe’s story “Berenice” is utterly fixated on these objects that belong to his cousin. At the end of the story, he finds an ebony box containing these objects by his cousin’s grave.

ANSWER: Berenice’s **teeth** [prompt on “dental equipment” since there is some dental equipment in the box, as well]

7. The fifth member of this program had the longest Earth observation satellite mission in history, at nearly thirty years. For 10 points each:

[10] Name this program, begun in 1972, for satellite imaging of Earth. Its eighth and most recent satellite, launched in 2013, measures 11 spectral bands with a repeat cycle of 16 days.

ANSWER: **Landsat**

[10] Landsat has been a crucial source of free data in this field focused on using measurements from a distance to gather information. Important technologies in this field include Lidar and aerial photography.

ANSWER: **remote sensing**

[10] Many remote sensing vegetation indices, like NDVI, compare bands in the visible range and the near part of this region of the electromagnetic spectrum with a somewhat longer wavelength. It is used in thermal imaging.

ANSWER: **infrared** radiation

8. Only 1,127 lines remain of this poet’s work recounting the early life of Achilles. For 10 points each:

[10] Name this poet, who wrote a five-book collection of poetry that opens with the poet praising an equestrian statue of Domitian.

ANSWER: Publius Papinius **Statius**

[10] In his *Thebaid*, Statius wrote of an attack against Thebes led by seven men from this city. Homer applied the term for inhabitants of this city to the Greeks in general in the *Iliad* and *Odyssey*.

ANSWER: **Argos** [generously accept **Argives**, even though that’s not the name of the actual city]

[10] The *Thebaid* opens as one of these goddesses of vengeance named Tisiphone fulfills a request by Oedipus to drive a stake between Eteocles and Polyneices.

ANSWER: the **Furies** [accept the **Erinyes**]

9. Flamenco dancer Pastora Imperio commissioned this ballet, which its composer re-arranged for piano sextet and small orchestra. For 10 points each:

[10] Name this Manuel de Falla ballet about the gypsy Candela, whose feelings for Carmelo are haunted by her dead husband.

ANSWER: **Love, the Magician** [or **El amor brujo**; accept alternate, roughly similar translations such as **Wedded by Witchcraft**, **Spellbound Love**, or **Bewitched Love**]

[10] In this movement of *El amor brujo*, Candela gathers the other gypsies to help her banish the ghost of her dead husband. This movement, which features frenzied trills, was arranged into a popular piano piece.

ANSWER: “**Ritual Fire Dance**”

[10] This otherwise unrelated opera by Georges Bizet is about a Spanish gypsy who seduces Don José.

ANSWER: **Carmen**

10. This term originally referred to attendants in noble households. For 10 points each:

[10] Identify this English term, which later came to denote a commoner who owned his own land. It also denoted the soldiers who were below squires but above knaves in rank, and who comprised most longbowmen.

ANSWER: **yeoman** [or the plural, **yeomen**]

[10] This earlier term, possibly derived from a Germanic word meaning “free”, was used to refer to free tenants of the English crown who were not of noble birth.

ANSWER: **franklin** (the root is *frankaz, which also is the origin of the name of the Franks)

[10] Decidedly above franklins and yeomen were members of this chivalrous class who fought as mounted soldiers.

ANSWER: **knights**

11. This god's home is called Ydalir and he is considered the daughter of Sif and the stepson of Thor. For 10 points each:

[10] Name this Germanic god often depicted on skis carrying a bow.

ANSWER: **Ullr**

[10] Ydalir was considered a part of Alfheim, which was ruled by this Vanir god. His possessions include the golden boar Gullinbursti and the foldable ship Skidbladnir.

ANSWER: **Freyr** [do NOT accept "Freyja"]

[10] Because he had earlier relinquished his sword in an effort to woo Gerd, Frey was easily killed by the *jotun* Surt wrath during this final apocalyptic battle of Norse mythology.

ANSWER: **Ragnarok**

12. This musical's song "My Shot" cops a rhythmic cadence from the way Notorious B.I.G. spells out his name in "Going Back to Cali." For 10 points each:

[10] Name this hip-hop musical by Lin-Manuel Miranda about the life of the title Founding Father, including his love for Elizabeth Schuyler, cabinet battles, and his duel with Aaron Burr.

ANSWER: **Hamilton**

[10] In 2015, Miranda won one of these \$625,000 fellowships, often called "genius grants."

ANSWER: **MacArthur** Fellowship

[10] In *Synecdoche, New York*, this Philip Seymour Hoffman-played theater director uses a MacArthur Fellowship to build a grandiose theater project that grows uncomfortably close to reality.

ANSWER: **Caden Cotard** [accept either underlined portion]

13. Unlike most philosophers, this man had extreme commercial success and became the most prominent philosopher in Victorian England for several decades. For 10 points each:

[10] Identify this evolution enthusiast who coined the term "survival of the fittest."

ANSWER: Herbert **Spencer**

[10] This essay collection by Spencer contrasts the "militant" type of society that trusts government with an "industrial" one. It warns against policies that reduce men to serving society in "The Coming Slavery."

ANSWER: *The* **Man Versus the State**

[10] This man argued that survival is among many human interests in an article on Spencer's definition of mind as correspondence. He wrote an essay in which he defended grounds for the adoption of beliefs without evidence.

ANSWER: William **James** (the essay is "The Will to Believe")

14. This composer created numerous oboe concerti, most notably a D-minor concerto from his Opus 9, *12 concerti a cinque*. For 10 points each:

[10] Identify this Italian composer, one of whose works was the subject of an alleged attempted reconstruction by Renzo Giazotto based on documents found in the Saxon State Library in Dresden.

ANSWER: Tomaso **Albinoni**

[10] Giazotto's reconstruction of Albinoni's work resulted in a piece in G minor titled for this tempo. A piece for string orchestra by Samuel Barber titled for this tempo was broadcast after Franklin Roosevelt's death.

ANSWER: **adagio** [accept **Adagio** in G Minor; accept **Adagio for Strings**]

[10] The Adagio in G Minor is scored for violin, strings, and this form of musical accompaniment common in Baroque music, typically played by a harpsichord or other chordal instrument.

ANSWER: basso **continuo** [accept organ **continuo**; accept **figured bass**]

15. This poem is dotted with diacritical marks to aid the reader in understanding its "sprung rhythm." For 10 points each:

[10] Name this poem, which exhorts the reader to praise God for "dappled things."

ANSWER: "**Pied Beauty**"

[10] This Victorian poet penned "Pied Beauty" and wrote of a "dapple-dawn-drawn Falcon" in "The Windhover."

ANSWER: Gerard Manley **Hopkins**

[10] In "Spring and Fall," Hopkins notices this person in distress over trees shedding leaves, and reassures them, saying "as the heart grows older / it will come to such sights colder."

ANSWER: **Margaret** [prompt for name on "a young **child**" or equivalents]

16. A form of this quantity is measured in the Vickers test. For 10 points each:

[10] Name this quantity, which is 10 for diamond on the non-linear Mohs scale.

ANSWER: **hardness** [accept **scratch hardness** or **indentation hardness**]

[10] Hardness measurements must consider the negative ratio of transverse to axial strain, which is named for this French physicist. The Laplace equation results when the right side of his namesake equation is zero.

ANSWER: Siméon Denis **Poisson**

[10] Calculations suggest that this carbon allotrope, also known as hexagonal diamond, could be harder than regular diamond; however, defects in samples of this material give it real Mohs hardness values of around 8.

ANSWER: **Lonsdaleite**

17. The Ethics Committee cleared two of this group's members but accused them of poor judgment. For 10 points each:

[10] Identify this group of Senators accused of improperly intervening on behalf of the chairman of the Lincoln Savings and Loan Association in 1987.

ANSWER: **Keating Five**

[10] Prominent among the Keating Five was this Arizona Senator, who lost to Barack Obama in the 2008 election.

ANSWER: John (Sidney) **McCain** III

[10] Also among the Keating Five was this Senator, who took a flight aboard the *Discovery* as a Payload Specialist while still in office in 1998.

ANSWER: John **Glenn**

18. A pair of birds nest atop an ivy-covered column in this painting's foreground. For 10 points each:

[10] Identify this gloomy painting depicting a ruined city overrun by nature. Its left background is lined by a colonnade of broken marble columns.

ANSWER: **Desolation**

[10] *Desolation* is the fifth and final painting in this series whose first work depicts a *Savage State* of nature untouched by man.

ANSWER: *The* **Course of Empire**

[10] This member of the Hudson River School painted *The Course of Empire* and captured a lush landscape after a storm in *The Oxbow*.

ANSWER: Thomas **Cole**

19. Identify the following about the "Stupidity or Treason?" speech, for 10 points each.

[10] The speech was given before this Russian legislative body created in 1905 by the October Manifesto.

ANSWER: State **Duma** [or Imperial **Duma**]

[10] The speech was given by this leader of the Constitutional Democrats, or Kadets party, who was widely mocked by his opponents for promoting the conquest of Istanbul.

ANSWER: Pavel (Nikolayevich) **Milyukov**

[10] The speech denounced the clique that dominated the Tsar and Tsarina's lives, including this mystic, whose body was dumped into an icy river after he was killed.

ANSWER: Grigori Yafimovich **Rasputin**

20. This structure was to be constructed in honor of the tenth anniversary of Captain Alving's death. For 10 points each:

[10] Identify this building that catches fire at the end of Act II. Pastor Manders had earlier recommended to Mrs. Alving that she leave this building uninsured to prove her "faith in a Higher Providence."

ANSWER: the **orphanage** from *Ghosts*

[10] This Norwegian playwright included Pastor Manders and Mrs. Alving in *Ghosts*, and also penned *Hedda Gabler*.

ANSWER: Henrik **Ibsen**

[10] In this Ibsen play, Rebecca West admits to Johannes that she drove his wife Beata to commit suicide by means of jumping into a mill's water wheel, located at the title estate.

ANSWER: **Rosmersholm**

21. Answer the following about the social science of famines, for 10 points each.

[10] This Indian welfare economist studied famines in his own country in *Poverty and Famines*.

ANSWER: Amartya **Sen**

[10] Shige Song found that this phenomenon became less pronounced in China during famines under Mao Zedong. This phenomenon, which is stronger in southern China, is generally thought to be worsened by the One Child Policy.

ANSWER: **sex** ratio **imbalance** [accept anything indicating that there are more men than women in China, or that there is some imbalance in the sex ratio; accept **female infanticide** or **sex-selective abortion** or equivalents]

[10] Michael Watts, who argued famines in modern Nigeria resulted from colonial policy, works at this university. This school, home to the Phoebe Hearst Museum, has an anthropology department was founded by Alfred Kroeber.

ANSWER: University of California, **Berkeley** [or **Cal** Berkeley; prompt on **University of California**]

22. Hong Kong and Macau are exempted from this system and use identification cards instead. For 10 points each:

[10] Identify this household registration system in China, which requires a person to register with an area.

ANSWER: **hukou** system

[10] The 270 million or so of these people in China are routinely denied health care in urban areas thanks to the *hukou* system. Groups of these people who live in underground accommodations are called the “rat tribe.”

ANSWER: **migrant** workers [or economic **migrants**; or rural **migrants**; or **nóngmín gōng**]

[10] Somewhat better off than the “rat tribe” is the “ant tribe” which consists of recent university graduates who earn little or have this economic status, something they share with over half the young people of Greece.

ANSWER: **unemployed** [or **unemployment**]

23. This island’s largest ethnic group, the Bugis, is concentrated on the plains north of Makassar. For 10 points each:

[10] Identify this least populous of the Greater Sunda Islands, found between Borneo and the Moluccas.

ANSWER: **Sulawesi** [or **Celebes**]

[10] Sulawesi is separated from Borneo by a line named for this British naturalist that delineates the distribution of species of Asian and Australian origin. This man is sometimes known as the father of biogeography.

ANSWER: Alfred Russel **Wallace**

[10] Sulawesi, like fellow Greater Sunda Islands Java and Sumatra, is controlled by this country.

ANSWER: (Republic of) **Indonesia**

24. Defensins are among the many peptide families enriched in this amino acid, which names a family of proteases that includes caspases. For 10 points each:

[10] Name this amino acid, symbolized C, whose thiol side chain allows them to form disulfide bonds.

ANSWER: **cysteine**

[10] The namesake metal of this structural motif coordinates with two cysteines and two histidines. Sangamo Biosciences uses nucleases fused with this kind of DNA-binding domain to engineer HIV resistance in T cells.

ANSWER: **zinc fingers** [accept **zinc finger** nucleases or **ZFNs**]

[10] Sangamo’s zinc finger nucleases edit this gene, which encodes a chemokine receptor that HIV uses to infect immune cells. A 32-base pair deletion in this gene confers resistance to many forms of HIV.

ANSWER: **CCR5** [or **C-C chemokine receptor** type **5**; or **CD195**]