

MKULTRA 3: Asking the Super-Important Questions

Written and Edited by Evan Lynch, Emma Laslett, Edmund Dickinson, David Knapp, Daoud Jackson, Pietro Aronica, Francis Clark-Murray, Tom Hill, Ben Salter, Alex Bubb, James Leahy, Chris Stern

Editors 4

Tossups

1. **C nucleosides extracted from one member of this phylum were used to synthesise the antiviral a-ciclo-vir. Most carnivorous members of this phylum belong to the family Clado-rhizi-dae. Mitchell Sogin demonstrated that all multicellular animals are genetically based on a member of this phylum. Members of this invertebrate phylum in Shark Bay in Australia were observed to be used as (*) tools by bottlenose dolphins. Members of this phylum reproduce using buds called gemmules. Spicules strengthen the mesohyl endoskeleton in members of this phylum. Water circulates through members of, for 10 points, what phylum of sea sponges?**

ANSWER: **Porifera** [accept "**sponge**s" before read] <EWL, Biology>

2. **Allusions to Beethoven's Piano Sonata No. 32 appear in a work by this composer, which, despite being in C minor, concludes with two jarring C major chords. An octave G-sharp in the left hand begins a piece by this composer dominated by four-against-three cross rhythms. A set of variations on a duet from Mozart's Don Giovanni by this composer famously caused Robert (*) Schumann to publicly exclaim "Hats off gentlemen! A genius!" One of this composer's preludes uses an A-flat ostinato to evoke the title *Raindrop* effect, and the poetry of Adam Mickiewicz inspired this man's four *ballades*. For 10 points, name this Polish composer of *Fantasia-Impromptu*, and the *Revolutionary Étude*.**

ANSWER: Frédéric François **Chopin** [or Fryderyk Franciszek **Chopin**] <BS, Auditory Fine Arts>

3. **The resort of Awaza has been optimistically described as this country's "Las Vegas". The collapse of a natural gas field into an underground cavern led to the creation of the Darvaza gas crater in this country. This country's city of Konye-Urgench is home to a complex containing six mausoleums and the Kutlug-Timur Minaret. Water from the (*) Amu Darya river is transported to this country's capital via the Karakum Canal. The Monument of Neutrality in this country's capital formerly incorporated a rotating gold-plated statue of ex-president Saparmurat Niyazov. Situated south of Uzbekistan, for 10 points, name this central Asian country with capital Ashgabat.**

ANSWER: **Turkmenistan** <DK, Geography>

4. **This country is home to the Fazl Mosque, which forms the international headquarters of the Ahmadi community and its Caliph. An early mosque in the north of this country, which is also home to the Salafist organisation Al-Muhajiroun, was established by Abdullah Quilliam. Swiss Theologian Tariq Ramadan currently holds a professorship in Contemporary Islamic Studies at a University in this country, and other Muslim scholars in this country include (*) Timothy Winter. In 2016, this country's Parliament attracted controversy by announcing it would relocate to premises governed by Sharia law. For 10 points name this country, where the Shah Jahan Mosque was constructed in Woking.**

ANSWER: **United Kingdom** of Great Britain and Northern Ireland [accept **Great Britain** or similar] <DJ, Religion>

5. **In *Fleep*, the amnesiac Jimmy Yee realises that he is one of these people after waking up in a phone booth encased in concrete. In one film, a character of this kind bought a communications satellite from Brij Nath, and jumped to his death after destroying the Kremlin: he was Michael Nyqvist's "Cobalt". Playable characters of this kind include Alex Mercer, who released the BLACKLIGHT (*) virus, and Barret Wallace who leads a group of these people against Shinra. A group of**

these people called Divine Earth are stopped from destroying the Thames Barrier by Ros Myers and Adam Carter. For 10 points, name these politically motivated criminals habitually confronted by Jack Bauer.
ANSWER: **terrorists** [accept **bioterrorists** or **eco-terrorists**; accept **Simbanese Liberation Front** until “one film”; prompt on **bombers** or similar; prompt on **criminals** until mentioned] <EBL, Miscellaneous>

6. **One work by this man consists of seven dialogues in the form of a letter by a man named Dion; that work includes an argument for God’s existence based on this man’s theory of vision. One argument by this philosopher, which attempts to show that humans cannot imagine a mind-independent object, was termed the (*) “master argument” by Andre Gallois.** This philosopher, who used a character that may represent John Locke in one work, summed up one of his positions as “esse est percipi”. For ten points, name this author of *Alciphron* and *Three Dialogues between Hylas and Philonous*, an Irish philosopher and bishop.

ANSWER: George **Berkeley** <FCM, Philosophy>

7. **One mechanism that decreases the intensity of this process occurs at distances of less than 10 angstroms and is named for David Dexter. An inverse-sixth power dependence on donor-acceptor distance was described by Theodor Förster in his theory of this process’ resonance energy transfer. Singlet-singlet transitions in this radiative process are shown on a (*) Jablonski diagram.** This process occurs at a wavelength of 509 nanometres in a protein first found in jellyfish that produces a green colour. For 10 points, name this process where a system immediately re-emits absorbed radiation at a longer wavelength, contrasted with phosphorescence.

ANSWER: **fluorescence** <EWL, Chemistry>

8. **An early test for this offence arose through a case concerning the dissemination of anti-Catholic pamphlets; that case was *R vs. Hicklin*. The Court of Appeal found that judge Michael Argyle had misdirected a jury in a trial for this offence. The “public good” defence introduced into law through a Roy Jenkins bill was tested in a trial for this offence at which Mervyn Griffith-Jones (*) cross-examined the Bishop of Woolwich. Felix Dennis was jailed for this offence as one of the “Oz Three” after publishing a cartoon of Rupert Bear. For 10 points, name this offence which was the subject of *R vs Penguin Books*, a trial concerning the publication of *Lady Chatterley’s Lover*.**

ANSWER: **obscenity** [or publishing or sending or disseminating **obscene** material; accept **Obscene Publications Act 1959**] <ED, History>

9. **In a *Friends* episode, Joey discovers the liaison between Monica and Chandler because they independently mention they saw this man waiting for the elevator. In his song “So Appalled”, Kanye West claims that this man is “taking dollars from y’all”. He is not Daniel Radcliffe, but this man contracts AIDS in the 2016 movie *Grimshy*. In *The Simpsons* episode (*) “Bart to the Future”, Lisa’s predecessor as the US President is this man. On SNL, this man was portrayed by Phil Hartman, Jason Sudeikis, and, more recently, by Alec Baldwin. This man gives directions in a hotel lobby to Kevin McCallister in *Home Alone 2*. For ten points, name this 45th President of the United States.**

ANSWER: Donald J. **Trump** <PA, Trash>

10. **While passing from outer to inner sections of these places, guests would traditionally use a *roji* or “dewy ground” to approach the *machi-ai* [mah-chee-“eye”], where they would pause. One guide for the organisation of these places, the *Sakute-iki* [sah-kuh-tay-ee-kee], outlines techniques including their “Ocean Style”. *Saihō-ji* [sye-hoh-jee] is home to one of these places whose design by Musō Soseki did not include the (*) moss for which it has gained renown. Ornamental waterfalls and bridges are common features of these locations where stones in ponds often represent dragons. For 10 points, give the common English word for these artistic layouts of water, trees and rocks, as practiced in Japan.**

ANSWER: Japanese **garden(s)** [accept **tea garden** or **teien** or **niwa**] <DJ, Visual Fine Arts>

11. Adarkar and Menon's *One Hundred Years One Hundred Voices* describes mill-workers in the Girangaon area of this city. The organized crime syndicate D-Company was founded in this city by Dawood Ibrahim who orchestrated a series of twelve coordinated bombings in this city in 1993. The cartoonist Bal Thackeray began the magazine *Marmik* in this city which became the main organ of the (*) Shiv Sena. Frederick William Stevens designed this city's Victoria Terminus, which has since been renamed in honour of Marathi hero and backstabber Shivaji. For 10 points, which capital of Maharashtra is home to Bollywood?

ANSWER: Bombay [or Mumbai] <DJ, History>

12. It's not a shell, but in the *Vishnudharmottara Purana*, one of the *nidhi* accompanying Kubera emerges from a member of this kingdom. In the *Mahabharata*, Bhima searches for Saugandhika, a member of this kingdom, to give to Draupadi. The traditional end of the monsoon and the beginning of the Hindu marriage season is marked by a ritual on the 12th of Kartik, where Vishnu is ceremonially married to a member of this kingdom, Tulsi. The goddess (*) Lakshmi is traditionally depicted standing on and holding members of this kingdom in her role as *padmahasta*. In the Vaishnavite tradition, Brahma emerges from one member of this kingdom growing from the navel of Vishnu. For 10 points, name this taxonomic kingdom which includes holy basil and the lotus.

ANSWER: Plants [accept any particular plant] <DJ, Religion>

13. One character in this novel refers to *Robinson Crusoe* like a religious person would refer to the Bible. One character in this novel led by a nightgown that smeared wet paint finds that Rosanna has committed suicide in the Shivering Sands. A re-enactment proposed by Ezra Jennings reveals that the crime in this novel was accidentally caused by Dr Candy giving (*) laudanum to help another character sleep. The pawnbroker Septimus Luker and the real criminal Godfrey Ablewhite are tracked by Sergeant Cuff, who is tasked with finding the title object of this novel, originally taken by Colonel Herncastle from Seringapatam. Franklin Blake acts as an editor to the many narrators of, for 10 points, which Wilkie Collins novel about the theft of an Indian diamond?

ANSWER: The Moonstone <ABB, Literature>

14. One of these figures has released three albums of dance covers, including *La La Love To Dance* and *Party Pop*, after first finding fame with a YouTube hit entitled "I'm [one of these figures]". A Disney TV series about these figures led to the re-theming of the Disneyland Motor Boat Cruise in 1991, and the theme tune to that series was performed by Joseph Williams, former lead singer of Toto. The largest commercial examples of these figures weigh five pounds, and are available in (*) flavours such as "Fruity Bubblegum", "Blue Raspberry", and "Patriotic". Hans Riegel originally created the "Dancing" form of these figures in 1922, but replaced them with the smaller, more common "Gold" form in 1967. For ten points, originally produced by Haribo and emulated by confectioners everywhere, name these gelatin-based zoomorphic candies.

ANSWER: Gummy bears [prompt on partial answer, accept Gummibär; or "I'm a Gummy Bear (The Gummy Bear Song)"; or Disney's Adventures of the Gummi Bears; or "Tanzbär"; or "Dancing Bear"; or "Goldbär"; or "Gold-Bear"] <EBL, Trash>

15. One character in this play is described as "some Asian foreigner" who is "too womanish to be a proper man." In a monologue at the start of this play, an elderly man warns that "the bold demagogue, powerful in speech / is but a dangerous citizen lacking sense" and thus he and a companion "will crown our heads with ivy, dance along / An hoary pair--for dance perforce we must". Near the end of this play, (*) Cadmus is not impressed when his daughter brings him the head of his grandson, which she thinks is that of a mountain lion. That daughter ripped her son to pieces under the influence of the god of wine. For 10 points name this play in which Dionysus seeks revenge on Pentheus and Agave, a work of Euripides.

ANSWER: *The* Bacchae [or The Bacchantes; or Bakhai] <DJ, Literature>

16. "Huele a quemado" was the name of a backup plan, never put into action, to have guerrillas destroy this structure. Alessandro Malaspina and Alexander von Humboldt were amongst the first to outline plans for this structure. A namesake corruption scandal halted the first attempt to build this structure for which Gustave Eiffel had been contracted under (*) Ferdinand de Lesseps. This structure consists of a series of artificial lakes, with the Culebra Cut crossing the Continental Divide. The Torrijos-Carter Treaties changed the ownership of this structure that had been under US control since 1903. For 10 points, name this structure that connects the Atlantic and Pacific Oceans.

ANSWER: Panama Canal <PA, History>

17. One song by this artist claims "A promise lives within you now", while another makes reference to "Rob Dickins at the wheel". One album by this singer is named for the moons Pandora and Prometheus, and contains tracks such as "Angeles", "No Holly For Miss Quinn", and "Book of Days". One album by this singer sees her use Japanese for the first time in "Sumiregusa (Wild Violet)", and the fictional language of Loxian in tracks such as (*) "Water Shows the Hidden Heart", while other singles by her are sung in Quenya, Sindarin, and Gaelic. This artist contributed the song 'Aníron' to the *Fellowship of the Ring* soundtrack, and another of her songs plays over the end credits. For 10 points, name this Irish singer of "Only Time", "May It Be", and "Orinoco Flow".

ANSWER: Enya Patricia Brennan [prompt on Brennan; and the Gaelic's Eithne Pádraigín Ní Bhraonáin, but it's pronounced basically the same] <EBL, Trash>

18. When this operation is not purely spatial in Minkowski space, it describes a Lorentz transformation applied to the interval between two events. The Ehrenfest paradox in special relativity concerns a rigid body undergoing this process. In classical mechanics, if the rate of this process changes, an (*) Euler force acts on a body. In the simplest quantum mechanical model of this process for a linear system, the energy difference to the next excited state is the product of twice a namesake constant with the quantum number, and the eigenfunctions are normalised spherical harmonics. For 10 points, name this condition of a system that in mechanics creates the Coriolis and centrifugal forces.

ANSWER: rotation [or rotating; accept rigid rotor] <ED, Physics>

19. In the cartoon *The Tick*, the main character chooses to shout this object's name as his battle cry. One character in a David Firth cartoon describes the orgasmic "feeling of rust" due to these objects. This is the *Extremely Inefficient Weapon* used by *The Horribly Slow Murderer*. This chief obsession of (*) *Salad Fingers* should be thrown at the screen whenever they appear when viewing *The Room*. Alan Rickman yells that he will cut the title character's heart out with one of these objects in *Robin Hood: Prince of Thieves*. For 10 points, what item does Neo realise that "there is no..." of after trying to do like Uri Geller and bend one?

ANSWER: spoons <PA, Miscellaneous>

20. In a story featuring one of these objects, a narrator in Edinburgh sees her dog Diana eaten by a giant rat. That narrator, Signoria Zenobia, is decapitated by one of these objects in the short story "A Predicament". In another story, the Devil takes control of one of these objects in the village of Vondervotteimitiss. One of these objects sits in the seventh of a sequence of (*) coloured rooms in an abbey, and a mummer is found beneath the shadow of that ebony one of these objects after killing Prince Prospero. Rats and General Lasalle rescue the narrator from part of one of these objects used by the Spanish Inquisition for torture in *The Pit and the Pendulum*. For 10 points, name these common motifs in Edgar Allan Poe stories, used to tell time.

ANSWER: clocks [antiprompt on "pendulum" before read; prompt on "belfry"] <EWL, Literature>

Bonuses

1. This word literally means “strange beast”, and is used to describe giant monsters such as Godzilla that feature in special effects-heavy films. For 10 points each:

[10] Give this Japanese term that was also used to describe the enemies in the 2013 movie *Pacific Rim*.

ANSWER: **Kaiju** [kye-joo] [do not accept or prompt on “kaijin”]

[10] This J.J. Abrams film may be the closest Hollywood approach to the *kaiju* genre. This 2008 film presented as found footage from a camcorder sees a giant monster attack New York.

ANSWER: **Cloverfield** [do not accept or prompt on “10 Cloverfield Lane”]

[10] In an homage to the *kaiju* genre on this TV show, a group of Japanese investors are embarrassed when a man in a mole costume is attacked by a boy riding a jetpack while crushing a model of Sudden Hill.

ANSWER: **Arrested Development** [in the episode “Mr. F”] <PA, Miscellaneous>

2. Much like Edinburgh, this city is dominated by a castle perched on top of a rocky crag. For 10 points each:

[10] Name this central Scottish city where Robert the Bruce defeated Edward II at nearby Bannockburn.

ANSWER: **Stirling** [or **Sruighlea**]

[10] Stirling is situated on this river’s meandering middle reaches. This river flows past Alloa before becoming its namesake Firth just beyond Kincardine.

ANSWER: River **Forth** [or Abhainn **Dubh**; or Uisge **For**]

[10] Northwest of Stirling is this range of hills, in which south-flowing burns have cut deep ravines such as Dollar Glen and Silver Glen.

ANSWER: **Ochil** Hills [or Monadh **Ochail**] <DK, Geography>

3. While evaluating Israeli officer candidates, this psychologist noticed his confidence in his assessments did not change when he became aware of their inaccuracy, which he called the ‘illusion of validity’. For 10 points each:

[10] Name this psychologist, whose other work on heuristics and cognitive biases with Amos Tversky includes analysing the responses to a description of a woman named Linda, who may or may not be a bank teller.

ANSWER: Daniel **Kahneman**

[10] Kahneman received a Nobel Prize for his contributions to this field of economics, which does not assume that economic agents act rationally when making decisions.

ANSWER: **behavioural** economics

[10] This economist coined the term “endowment effect” to describe cases where owning a good appeared to increase its subjective value. Along with Cass Sunstein, he co-authored the 2008 book *Nudge*.

ANSWER: Richard **Thaler** <FCM, Social Science>

4. As Charles VI became increasingly mad, his relatives vied for political control of France. Answer some questions about the resulting power struggle, for 10 points each:

[10] In 1407, the king’s brother Louis of Orléans was murdered in Paris by masked thugs. His assassination had been ordered by John the Fearless, the duke of this semi-autonomous region.

ANSWER: **Burgundy**

[10] Louis’ murder resulted in a civil war between the Burgundians and this other faction, who rallied around his son Charles. This faction takes its name from the title of Charles’ father-in-law, who served as Constable of France until his murder in 1418.

ANSWER: **Armagnacs** [named for Bernard VII, Count of Armagnac]

[10] Amidst their struggle with the Armagnacs, the Burgundians formed a notorious alliance with the English. In 1430, they were responsible for capturing and handing over this warrior and visionary, who was burnt at the stake the following year.

ANSWER: **Joan of Arc** [or **Jeanne d’Arc**] <TH, History>

5. Answer the following about the path integral formulation, for 10 points each:

[10] The path integral formulation generalises a principle from classical mechanics named for this quantity, which is minimised according to Hamilton's principle. This quantity is equal to the time integral of the Lagrangian.

ANSWER: **action**

[10] The path integral formulation was developed by this Caltech physicist, who developed namesake diagrams to describe the behaviour of subatomic particles, and won the Nobel Prize for developing quantum electro-dynamics.

ANSWER: Richard **Feynman**

[10] The path integral formulation fails for a quantum field theory with gauge symmetry unless these fields are introduced into the field theory. These fields prevent overcounting and are named for Faddeev and Popov.

ANSWER: **ghost** fields [or just **ghosts**; accept Faddeev-Popov **ghosts**] <EWL, Physics>

6. After bragging about the size of his penis, this figure begins to make love to Mescalina, only to kill her by biting her in the neck. For 10 points each:

[10] Name this prince of hell that tries to destroy the world with a comet, but fails when Astradamors, Piet, and Prince Go-Go all survive.

ANSWER: **Nekrotzar**

[10] Nekrotzar is the antagonist of *Le Grand Macabre*, the only opera by this Hungarian composer, whose micropolyphonic *Atmosphères* and *Requiem* were both featured in the soundtrack for *2001: A Space Odyssey*.

ANSWER: György **Ligeti**

[10] *Le Grand Macabre* opens with a prelude for 12 of these unusual "instruments". George Gershwin included 4 of these things in the instrumentation for *An American in Paris*, evoking images of a traffic jam.

ANSWER: **car horns** [accept **taxi horns** or indeed the horns of any vehicle; prompt on **horns**; do NOT accept or prompt on "French Horn" or "English horn" obviously] <BS, Auditory Fine Arts>

7. Characters involved in the creation of this game's title organisation include Jack Morrison, Ana Amari and Gabriel Reyes. For 10 points each:

[10] This team-based online shooter was released in May 2016, and reported a total playtime of 119 million hours in its first week.

ANSWER: **Overwatch**

[10] *Overwatch* was published by this California-based video game company, now owned by Activision. Other games by this company include *Heroes of the Storm*, *Hearthstone*, and the *Diablo* series.

ANSWER: **Blizzard** Entertainment, Inc. [antiprompt on **Blizzard North**]

[10] Blizzard's biggest success to date has been this genre-defining MMORPG, opened in 2004. This game saw 2005's 'Corrupted Blood incident', which was studied for its implications for real-world epidemics.

ANSWER: **World of Warcraft** [accept **WoW**, do **not** accept "Warcraft"] <EBL, Trash>

8. Susan L. Smith defined an artistic topos of the "Power of Women" in which male dominance is subverted. For 10 points each:

[10] That topos included a work by Lucas Cranach in which this Biblical heroine poses proudly in a velvet hat with the head of the Assyrian general Holofernes. Gustav Klimt later painted this woman highlighted in gold.

ANSWER: **Judith**

[10] This Baroque artist painted a *chiaroscuro* treatment of *Judith Slaying Holofernes* that unlike Caravaggio's treatment emphasises the physical strength required to behead him.

ANSWER: Artemisia **Gentileschi** ["jen-tee-LESS-kee"]

[10] Gentileschi also painted a version of the seduction of this man, though in contrast to the usual “Power of Women” theme, he seems complicit in the event. Albrecht Dürer painted this Biblical figure on the reverse of the Haller Madonna.

ANSWER: **Lot** [accept **Lot and his Daughters**] <PA, Visual Fine Arts>

9. Answer the following about Ignatius J. Reilly, for 10 points each:

[10] Ignatius is the protagonist of this picaresque novel by John Kennedy Toole, which was written in Puerto Rico.

ANSWER: A **Confederacy of Dunces**

[10] This part of Ignatius’ anatomy plays a very important role in his life. Dysfunctions of this body part accompany major events in the novel.

ANSWER: his **pyloric valve** [both words required]

[10] Ignatius lives and has his adventures in this city. Critics mention details such as the Dr. Nut beverage and the Yat dialect as reasons why it is the best fictional depiction of this city.

ANSWER: **New Orleans** [or **N’awlins**] <PA/EWL, Literature>

10. For 10 points each, answer the following about the developing fashions of men’s formal wear:

[10] Travellers returning from Persia introduced this formalwear item to the court of Charles II, who declared it as required court dress in an attempted purge of French flamboyance.

ANSWER: **waistcoat** [prompt on **vest** because this isn’t America]

[10] The practice of not buttoning the bottom button of a suit jacket or waistcoat is attributed to the fatness of this Victorian-era trendsetter, who also popularised black ties with dinner jackets and the necktie in formal wear.

ANSWER: **Edward VII** [accept (Prince) **Bertie** or Albert **Edward**; do not accept or prompt on “Prince Albert”]

[10] These features of a men’s coat or jacket originated as a single divide in the cloth to allow the jacket tails to fall cleanly when on horseback. Dinner jackets traditionally exclude these features.

ANSWER: **vents** [accept centre **vents** or side **vents**] <ED, Miscellaneous>

11. Answer the following about Neolithic monuments and their afterlives, none of which are Stonehenge. For 10 points each:

[10] This Norfolk flint mining complex later became the site of a Saxon hundred court, and its name suggests the burial of a god who has been identified with Woden.

ANSWER: **Grime’s Graves**

[10] According to local folklore, an invisible smith will shoe your horse if you leave him some money inside this long barrow and chamber tomb complex near the Ridgeway.

ANSWER: **Wayland’s Smithy**

[10] Maumbury Rings is a henge in the south of this town which was later converted into a Roman amphitheatre and then into a Civil War gun emplacement. A causewayed enclosure was built where Maiden Castle now lies south west of this town.

ANSWER: **Dorchester** <OC, History>

12. Notable musical visionary MC Hammer did this to fellow luminary Rick James’ “Super Freak” to create “U Can’t Touch This”. For 10 points each:

[10] Name this common practice in modern music production, in which portions of a previously recorded track are used in the creation of a new piece.

ANSWER: **sampling** [or word forms; antiprompt on **plunderphonics**]

[10] One of the earliest pioneers of sampling was this Jamaican dub pioneer, who used a sample of a crying baby on his first release and later made frequent use of sampling on records produced at his studio, the Black Ark.

ANSWER: Lee "Scratch" Perry [accept either underlined part; accept Rainford Hugh Perry, Pipecock Jackson, or The Upsetter]

[10] Recognised as the first studio album composed entirely of samples, this 1995 DJ Shadow release sampled everything from Metallica to Björk to create such singles as "Stem" and "Midnight in a Perfect World".

ANSWER: Endtroducing... <EBL, Trash>

13. Following the decline of the Ghana Empire, the Mali Empire became the dominant power in West Africa. For 10 points each:

[10] Arguably the most famous ruler of Mali is this emperor, whose generosity during a trip to Mecca wreaked havoc on the local economy.

ANSWER: Mansa Musa Keita I

[10] The Mali Empire would eventually be superseded by this empire, which had started as a vassal of Mali but gained its independence under Sonni Ali.

ANSWER: Songhai Empire

[10] Mansa Musa constructed this large institute of learning, whose name means "white nobles" in Timbuktu. It was home to the largest library in Africa since the destruction of the Library of Alexandria.

ANSWER: Sankore Madrasah [prompt on "University of Timbuktu"] <PA, History>

14. The shepherdess Phoebe falls in love with Ganymede without realising he is actually this character in disguise. For 10 points each:

[10] Name this daughter of Duke Senior, who lives with Touchstone and Celia in the Forest of Arden and ultimately marries Orlando.

ANSWER: Rosalind [do not accept "Rosaline"]

[10] Rosalind and Orlando appear in this Shakespeare comedy, which includes the "All the world's a stage" speech.

ANSWER: As You Like It

[10] As she falls for Rosalind, Phoebe quotes "Whoever loved that loved not at first sight" from this contemporary poem about another pair of doomed lovers, which was completed by George Chapman after its author's untimely death.

ANSWER: "Hero and Leander" [by Christopher Marlowe] <EWL, Literature>

15. Answer some questions about the incredibly useful Marcinkiewicz ["mar-chin-KAY-vitch"]

Interpolation Theorem, for 10 points each:

[10] Under certain conditions, the Marcinkiewicz Interpolation Theorem guarantees this property for non-linear operators. An operator has this property if the supremum of the norm of "T of x" divided by the norm of x, is finite.

ANSWER: boundedness [or anything mentioning it having a bound; don't accept putative synonyms such as "it's finite", which isn't true - the word "bound" must appear somewhere]

[10] A *linear* operator is bounded if and only if it has *this property* everywhere, which by the magic of linearity is equivalent to having this property just at zero. One form of this property is named for Lipschitz.

ANSWER: continuity [or continuous; or word forms]

[10] The Marcinkiewicz Interpolation Theorem applies to functions in L-P spaces, which are spaces whose norm is defined by the Lebesgue form of this operator. It is the inverse of the derivative, and in simple cases can be used to calculate the area under the graph of a function.

ANSWER: integral [or integration; prompt on antidifferentiation or antiderivative] <BS, Other Science>

16. This man captained Spain to the 2008 and 2012 European Championships and the 2010 World Cup. For 10 points each:

[10] Name this goalkeeper and most-capped Spanish international who left Real Madrid in 2015 after 17 years.

ANSWER: Iker **Casillas** Fernandez

[10] After his departure from Real Madrid, Casillas signed for this Portuguese side, but has so far failed to help them regain the Primeira Liga title which they last won in 2012-13.

ANSWER: FC **Porto**

[10] Casillas's place as Real Madrid number one has been taken by this Costa Rican international.

ANSWER: Keylor (Antonio) **Navas** Gamboa <DK, Trash>

17. The anti-cancer drug taxol inhibits the formation of these structures. For 10 points each:

[10] Name these components of the cytoskeleton, which are "walked" on by the motor proteins kinesin and dynein.

ANSWER: **microtubules**

[10] Microtubules are found in a characteristic "nine plus two" arrangement in cilia and these other organelles, long appendages which protrude from the cell body. Sperm cells move using these organelles.

ANSWER: **flagella** [or **flagellum**]

[10] Like taxol, this compound also inhibits the formation of microtubules, hence a solution of it is used to arrest mitosis in metaphase during karyotyping. It is also commonly used to treat gout.

ANSWER: **colchicine** <EWL, Biology>

18. Welsh myth has a tendency to put everything into weirdly specific lists, so here are some of the Thirteen Treasures of the Island of Britain. For 10 points each:

[10] One of the cooler entries on the list is Dyrnwyn, the flaming sword of this legendary king of Alt Clut, known as 'the Generous' because of his willingness to give it to anyone who asked.

ANSWER: **Rhydderch** Hael ["RITH-erkh HEIL"] [accept **Rhydderch** the Generous or **Rhydderch I** of Alt Clut, prompt on **Rhydderch of Alt Clut**]

[10] Some of the list feels a bit like filler - for example, it features a cauldron, a whetstone, and a coat, all of which serve only to distinguish between these two kinds of people.

ANSWER: **brave** people and **cowards** [both parts required, prompt on partial answer, accept clear-knowledge equivalents]

[10] Probably the most famous owner of one of the Treasures is this legendary king, whose white mantle gives invisibility to the wearer and is said to be kept in his court in Cornwall.

ANSWER: King **Arthur** Pendragon

19. Answer these questions on roguish Tudor travellers, for 10 points each:

[10] Following his exploration of Virginia, Sir Walter Raleigh published a *Discoverie* of this country, where he twice sought the fabled city of El Dorado.

ANSWER: **Guyana**

[10] Thomas Coryate recorded his travels in Italy in a travelogue about his *Crudities*, and his book is credited with introducing this device to England, for which he was rewarded with the nickname "Furcifer".

ANSWER: the table **fork**

[10] This Elizabethan pamphleteer and author of *The Unfortunate Traveller* collaborated with Ben Jonson on *The Isle of Dogs* and wrote the erotic poem *The Choice of Valentines*, with its notorious lyric about 'My little dildo'.

ANSWER: Thomas **Nashe** <ABB, Literature>

20. One thought experiment that criticises this ethical theory concerns a "monster" who gains more pleasure from performing any activity than any other individual. For 10 points each:

[10] Name this ethical theory, whose advocates have included R.M. Hare and Peter Singer.

ANSWER: **utilitarian**ism [prompt on **consequentialism**]

[10] The “utility monster” appears in *Anarchy, State and Utopia*, a book by this American philosopher. This man used people paying to watch Wilt Chamberlain play basketball to argue against patterned distributive justice.

ANSWER: Robert **Nozick**

[10] Nozick also used a thought experiment containing this hypothetical machine to argue against utilitarianism. This machine generates a simulated reality that is slightly more pleasurable than the real world.

ANSWER: **Experience** machine <FCM, Philosophy>