

Tossups:

1. This king only rose to the throne after his three elder brothers ruled in succession. He made a treaty with his enemy Guthrum to secure his kingdom from the harrying of the Great Heathen Army. Before that treaty, Guthrum had made him flee to the marshes, but this king was able to maintain the loyalty of his people and a system of ealdormen and thegns that could muster the fyrds so that this king could deal a decisive defeat to Guthrum at the Battle of Ethandun. This king is often held to be the father of the English navy. The son of Æthelwulf, he succeeded his brother Æthelræd in 871 and was in turn succeeded by his son Edward the Elder. FTP, name this king of Wessex, the first and only native English king to be known as ‘the Great.’

ANSWER: **Alfred the Great**

2. In this novel, the protagonist runs away after beating Noah Claypole in a fight and acquires a job where he is told he will be making handkerchiefs. In another episode, a character overhears two men agreeing to throw a ring and necklace that belonged to the protagonist's mother off a bridge. That character, Nancy, is later beaten to death by Bill Sykes. The protagonist donates part of his inheritance to his half-brother Monks, and finally is adopted by Mr. Brownlow. FTP, name this novel, featuring the Artful Dodger and Fagin, by Charles Dickens about an orphan who iconically asks for more gruel.

ANSWER: **Oliver Twist**

3. A positive response to the Paul-Bunnell heterophile antibody test indicates infection by this virus, and the Miller-Hutt-Fletcher process is one way it can target cells. Marmoset cell immortality is a result of this virus which can be responsible for both inhibition of the IL-10 receptor and promotion of autoimmune disease states through polyclonal B cell expansion. FTP, name this B-cell infecting virus linked to conditions like nasopharyngeal carcinoma, oral hairy leukoplakia, Burkitt's lymphoma, Hodgkin's Disease, and mononucleosis.

ANSWER: **Epstein-Barr** virus

4. This polity was one of the very few pre-colonial realms to span three continents, joining the ranks of Rome and the Umayyad Caliphate. The father of this empire was originally the ruler of a Ghazi emirate but built this empire from the ashes of the Seljuks and was named Osman. This empire declined after its apogee in the sixteenth century, and by the nineteenth and early twentieth centuries was known as the “sick old man of Europe.” This empire inherited the Seljuk war with the Byzantines but succeeded where the Seljuks had failed, when Mehmet II conquered Constantinople in 1453. FTPE name this empire that reached its height under Suleiman the Magnificent.

ANSWER: **Ottoman Empire** (prompt on **Ottomans**)

5. He appears in only one scene in his third film, a funeral scene for the Queen of his home planet, while in his second film appearance, this character initiates a vote to grant Chancellor Palpatine "emergency powers" precipitating the rise of the Galactic Empire. This character is originally saved from being crushed by a Trade Federation tank, leading him to convince Boss Nass to help the protagonists escape from Theed. FTP name this bumbling Gungan who first appeared in "The Phantom Menace" widely criticized by critics for being too comical and childish.

ANSWER: **Jar-Jar Binks**

6. The second stanza describes a creature with “gaze blank and pitiless as the sun” whose “twenty centuries of stony sleep were vexed to nightmare by a rocking cradle”. While the first stanza describes how “mere anarchy is loosed upon the world” when “the falcon cannot hear the falconer”, and “the best lack all conviction while the worst are full of passionate intensity”. FTP, the phrases “Slouching towards Bethlehem” and “things fall apart” originate in what poem by William Butler Yeats that describes an event foretold by the Book of Revelation?

ANSWER: “*The Second Coming*”

7. This man was a Fabian socialist and put forth a five-year plan in 1951. During WWII he refused to fight the Japanese and later helped organize the Bandung Conference. Later he was a leader of the Non-Aligned movement but was nevertheless forced to fight a war with China. He eventually made a deal with

Muhammad Ali Jinnah on Partition. FTP name this man, the leader of the Congress Party and the first Prime Minister of India.

ANSWER: Jawaharlal **Nehru**

8. One of his works while in the Employ of Maximilian I was entitled The Triumphal Arch. This man sketched a Rhinoceros which was the first seen in Europe since Roman times. This man made many journeys to Italy, painting some of the first landscapes along the way. His Young Hare was a pioneering work in watercolors, while one of his more famous works depicts a Knight marching along with two other, sinister figures, Death and the Devil. Perhaps his most famous work depicts a sad faced angel with an hourglass above his head about to write something. FTP, identify this leading figure of the Northern Renaissance, famous for woodcuts like Melancholia I.

ANSWER: Albrecht **Durer**

9. One of this man's victories in the early years of his reign came against the Shardana pirates, who would become one of the "Sea Peoples" that wreaked havoc across the eastern Mediterranean in the reign of the next king with this king's name. This king did everything on a large scale: he fought Muwatalli of the Hittites near the Orontes River at Kadesh in the largest chariot battle in history; was the longest-reigning pharaoh; and fathered nearly one hundred children. FTP name this great Egyptian pharaoh of the nineteenth dynasty, known to the Greeks and Shelley as Ozymandias.

ANSWER: **Ramses II**

10. Contemporary historians blame this author for perpetuating the myth that title explorer sought to prove that the earth is not flat in his *The Life of Voyages of Christopher Columbus*, which he wrote while Minister to Spain, a time that also saw him write his *Tales of the Alhambra*. In one short story by this author, the title character naps under a tree after a game of nine-pins only to wake up twenty years later, while in another story the Headless Horseman pursues Ichabod Crane. FTP, this is what early 19th Century American author whose *The Sketch Book of Geoffrey Crayon* contained the stories "Rip Van Winkle" and "The Legend of Sleepy Hollow"?

ANSWER: Washington **Irving**

11. This concept qualitatively expresses an intuition about the phenomena described quantitatively by a certain set of equations, and it can be used to predict that increasing temperature will increase the yield of an endothermic reaction or that decreasing pressure will push a reaction toward the side with fewer moles of gaseous products. FTP, name this principle that states that a chemical system at equilibrium will respond in opposition to disturbances to that equilibrium.

ANSWER: **Le Chatelier's Principle** or **Principle of Le Chatelier**

12. A collection of this man's courses on the origins of socialism were published after this man's death by Marcel Mauss. His Rules of the Sociological method was an attempt to found a method which would guarantee sociology's truly scientific character. Later this man analyzed how religion contributes to the maintenance of social order in his *The Elementary Forms of Religious Life*. In perhaps his most famous work, this author of the *Division of Labor in Society* classified the titular phenomenon into four types, egoistic, altruistic, anomic, and fatalistic. FTP, identify this pioneering French sociologist, the author of *Suicide*.

ANSWER: Emile **Durkheim**

13. Most Christian chroniclers and historians through the 19th century, including Edward Gibbon, thought this battle of macrohistorical importance, many modern historians, however, believe that the Muslim army under Abdul al-Rahman was nothing more than raiding party returning from profitable plunder at the monastery of St. Martin in southwest France. Tactically, this battle was notable in that the Franks used only well-disciplined infantry, rather than the knightly cavalry that was being developed at the time and would later characterize the medieval French army. Marking the highwater mark of Islamic expansion into Europe, FTP, name this 732 battle that paved the way for the Carolingian empire and was won by Charles Martel.

ANSWER: Battle of **Tours** (or **Poitier**)

14. It was famously refuted by Hilary Putnam and G. E. Moore, while Zhuangzi's butterfly dream is considered an Eastern equivalent of this movement. George Berkeley claimed that his immaterialism was the only method of avoiding this philosophy, and al-Ghazali claimed that faith was necessary to avoid this in his *The Incoherence of the Philosophers*. David Hume's discussion of the problem of induction led him to be branded an adherent of this philosophy, and the first of Descartes' *Meditations on First Philosophy* presents both the Evil Genius and Dream arguments for this view. In the ancient world, this philosophy was associated with the middle period of Plato's Academy, but was more famously exhibited by a school that took its name from Pyrrho of Elis. For ten points, name this philosophical school of Sextus Empiricus which claimed that all knowledge can be called into doubt.

ANSWER: skepticism

15. The so-called "threefold chord," presented in this opera's overture, appears again near the beginning of Act II, signifying that the choir deems the lead tenor worthy. In one quintet, a character sings "Hm, hm, hm, hm" because his mouth has been padlocked for claiming to have saved the tenor's life. When the tenor is unable to respond to his lover, she believes he is no longer in love with her and sings the aria "Ach, ich fühl's." A glockenspiel, representing a set of bells, accompanies the aria "Ein Mädchen oder Weibchen," and another character reaches high F in both of her arias, the second of which is the revenge aria "Der Hölle Rache," in which she urges her daughter to kill Sarastro. Featuring the Queen of the Night, Pamina, Tamino, and Papageno, for 10 points, identify this German opera by Mozart.

ANSWER: *Die Zauberflöte* (or *The Magic Flute*)

16. The ISIS facility, at Rutherford Appleton Laboratory in Oxfordshire, United Kingdom, is a source for muons and these particles. Its antiparticle was discovered by Bruce Cork, and the R-process and S-process are different ways in which they can be captured by a nucleus. These particles, when free, undergo beta decay with a mean lifetime of about 15 minutes. Made up of one up quark and two down quarks, it was discovered by James Chadwick. FTP, identify this particle whose number differs in different isotopes of the same element, a subatomic particle with zero charge.

ANSWER: neutrons

17. He is revered as a saint in the Ethiopian Orthodox Church, and his wife is traditionally held to be named Claudia Procula. Other traditions hold that he was born in Scotland and committed suicide in Gaul. He famously asked, "What is truth?" when Jesus Christ informed him of his mission, and repeatedly asked Jesus whether he believed himself to be King of the Jews. Although only Luke records his attempt to hand Jesus over to Herod for judgment, all four gospels make it clear that he did not find Jesus guilty of the accusations made by the Sanhedrin. For ten points, name the Roman governor of Judea who washed his hands of Jesus Christ's crucifixion.

ANSWER: Pontius Pilate

18. One novel by this author focuses on the trial of war criminal John Demjanjuk and hunting down an imposter using the author's name, while another imagines what would have happened had Charles Lindbergh become president. Besides *Operation Shylock* and *The Plot Against America*, another novel by this author tells the story of a professor who was fired for racism, though he is secretly black passing for white, Coleman Silk. While, the title character of his most famous novel has girlfriends nicknamed The Pilgrim, The Pumpkin, and The Monkey. This is, FTP, what author of *The Human Stain*, *American Pastoral*, and *Portnoy's Complaint*.

ANSWER: Philip Roth

19. They do not exhibit secondary growth of their stems, and their vascular tissue is not arranged in concentric rings but rather in the scattered atactostele formation. Vascular bundles in their stems feature a covering of parenchyma but no pith, and their pollen contains only one furrow. Roots are adventitious and can develop from buds other than the apical meristem shoot, while their stomata are arranged parallel to the long axis of leaves, all of which feature parallel venation. FTP, name the angiosperm class of plants that contains flower segments arranged in multiples of threes and only one seed leaf.

ANSWER: monocots or monocotyledons

20. One novel by this author was originally published under the name of its protagonist, Emil Sinclair, while another describes the efforts of the students of the Waldzell in Castalia to become Magister Ludi. In addition to *Demian* and *The Glass Bead Game*, he also wrote a book in which Harry Haller reads a pamphlet which helps him release the spirit of the titular animal within him, after which he stabs Hermione in the Magic Theatre and another in which the title character journeys with his companion Govinda to seek out enlightenment. FTP, this is what German-Swiss author of *Steppenwolf* and *Siddhartha*?

ANSWER: Hermann Hesse

21. This inertial force, described by a 19th-century French engineer and mathematician in 1835, often aids the formation of jet streams and western boundary currents. It is also responsible for Rossby and Kelvin waves as well as other types of waves found in the ocean and atmosphere. This effect is often naively used to suggest that toilets flush in different directions, depending on whether they are in the northern or southern hemisphere. FTP, name the effect responsible for counterclockwise movement of cyclones in the northern hemisphere and clockwise movement in the southern hemisphere.

ANSWER: Coriolis effect

Bonuses:

1. Answer the following about astronomical systems, FTPE:

[10] This structure is formed by diffuse material in orbital motion around a central body. If a white dwarf draws too much mass from this structure, it may explode in a supernova.

Answer: accretion disc

[10] White dwarf supernovas sometimes arise in this type of system where another celestial body is in close enough proximity to “spill” some of its mass into a disc surrounding the white dwarf.

Answer: binary star system or binary system

[10] Also sometimes found in the center of an accretion disk, this celestial body is the remnant of a massive star super nova. They can have a radius of up to 12 kilometers.

Answer: neutron star

2. FTPE, name some Christian heresies.

[10] This first great heresy held that the Son was not unbegotten but rather proceeded from and was subordinate to the Father, and that similarly the Father working through the Son created the Holy Spirit, which was in turn subordinate to the Son. Despite that, all three parts of the Trinity existed before Time. In any case, this heresy and its promulgator and namesake were condemned at the First Council of Nicaea, but that didn't stop many early Germanic converts from adopting it.

ANSWER: arianism

[10] This dyophysite heresy was condemned at the Council of Chalcedon in 451, for emphasizing the distinction and disunity between the human and divine natures of Jesus.

ANSWER: nestorianism

[10] This early second-millennium heresy was heavily dualist and believed that the material world was evil. It therefore rejected the doctrine of the crucifixion and disdained sexual reproduction and the eating of meat (except fish, which as everyone knows do not reproduce but rather spontaneously generate in water). This sect based in Languedoc in southern France was wiped out by an early 13th-century crusade.

ANSWER: Cathars or Catharism or Albigensians or Albigensianism

3. Answer these bonuses about vector addition FTPE:

[10] Given an isosceles triangle with legs of length 2, what is the range of values for the length of the third leg?

ANSWER: (0, 4)

[10] Name the theorem which states that the norm of the sum of two vectors must be less than or equal to the sum of the norms of the two vectors.

ANSWER: triangle inequality

[10] The triangle inequality theorem can be derived from this doubly eponymous theorem which states that the norm of a product of two vectors is less than or equal to the product of the norms of the two vectors.

ANSWER: Cauchy-Schwartz inequality

4. Stuff about the Roaring Twenties, FTPE:

[10] This idealistic, isolationist multinational agreement renounced the use of war as “an instrument of national policy,” and reflected the supposedly peaceable atmosphere of the times.

ANSWER: **Kellogg-Briand** Pact (accept the Pact of **Paris**)

[10] This Wisconsin senator and fiery opponent of trade unions, trusts, the League of Nations, and US involvement in foreign wars ran on the Progressive Party ticket in 1924, winning 17% of the popular vote.

ANSWER: Robert **La Follette** Sr.

[10] This aloof Republican president during the Roaring Twenties, in contrast to La Follette, was a strong supporter of laissez-faire economic policy. He was known for his saying, “The business of the American people is business.”

ANSWER: Calvin **Coolidge**

5. Answer some questions about European relations with the New World FTPE:

[10] This civilization was the largest empire of the Pre-Columbian Americas and occupied much of present-day Peru, Ecuador, Bolivia, Argentina, and Chile.

ANSWER: **Inca** Empire

[10] The Incas fought a disastrous battle with this Spanish conquistador at Cajamarca in 1532.

ANSWER: Francisco **Pizarro**

[10] Pizarro captured this last Incan emperor at Cajamarca. His supporters complied with a king’s ransom, but Pizarro had him garroted anyway.

ANSWER: **Atahualpa**

6. Answer these questions about thermodynamics, FTPE:

[10] This is a measurement of the “useful” or process-initiating work in a system. It is equal to the enthalpy minus the temperature times entropy.

ANSWER: **Gibb’s free energy**

[10] Gibb’s free energy can be used to characterize this quantity, which dictates to what extent a reaction or process will proceed towards the reactants or products at constant pressure and temperature.

ANSWER: **spontaneity**

[10] This thermodynamic potential is equal to the maximum amount of work extractable from a thermodynamic process in which temperature and volume are held constant. It is defined as the internal energy of the system minus the temperature times the entropy.

ANSWER: **Helmholtz free energy**

7. The ending of this work in its fifty-fourth chapter is famously abrupt, ending in mid-sentence, FTPE:

[10] This is what 11th century novel about the romantic adventures of the titular emperor’s son, whose amorous exploits include his forbidden love for his stepmother, Lady Fujitsubo.

ANSWER: *The **Tale of Genji***

[10] *The Tale of Genji* was written by this Heian-period Japanese author, one of the world’s earliest novelists.

ANSWER: Lady **Murasaki** Shikibu

[10] This rival of Lady Murasaki was the other leading literary figure of the Heian period, best known for her diary-like collection of observations about court life, *The Pillow Book*.

ANSWER: Sei **Shonagon**

8. One character in this work is attempting to write a work entitled, “The Key to All Mythologies”, FTPE:

[10] That character Edward Casaubon marries Dorothea Brooke, the protagonist of this “Study of Provincial Life” set in the titular Midlands town.

ANSWER: **Middlemarch**

[10] *Middlemarch* is the magnum opus of this Victorian British author who wrote about Arthur Donnithorne, Hetty Sorel, and the titular character, in her first novel, *Adam Bede*.

ANSWER: **George Eliot** or Mary Anne **Evans**

[10] The titular character of this George Eliot novel is a weaver who comes to Raveloe after being accused of stealing church funds in his previous town of Lantern Yard, and whose life is changed by the orphan Eppie.

ANSWER: Silas Marner

9. FTPE, name some people involved in the decline of the Carolingian empire.

[10] This man, the son of Charlemagne, was the last to rule Charlemagne's unified Frankish kingdom. This man's lands were divided among his three sons at the Treaty of Verdun of 843.

ANSWER: Louis the Pious

[10] This man was the eldest son of Louis the Pious and received the title of Emperor. He also got northern Italy and a territory running all the way to the Netherlands, including Lorraine, which was named for him. That territory did not long survive the wars between its neighbors, East and West Frankia.

ANSWER: Lothair

[10] This son of Louis the Pious and half-brother of Lothair and Louis the German received the territory of West Frankia, and he is often considered the first King of France. His nickname may be an ironic comment on his hairiness, or perhaps on his childhood lack of a sub-kingdom.

ANSWER: Charles the Bald (or Charles I)

10. Identify the following French composers active in the twentieth century, for 10 points each.

[10] He collaborated with Jean Cocteau and Pablo Picasso on the ballet *Parade* and also wrote "Three Pieces in the Shape of a Pear," but today he may be best remembered for his set of three *Gymnopédies* for piano.

ANSWER: Erik Satie

[10] This member of *Les Six* was influenced by Brazilian music in such pieces as *Saudades do Brasil* and *Le boeuf sur le toit*, and he also wrote the jazzy ballet *La création du monde*, or *The Creation of the World*.

ANSWER: Darius Milhaud

[10] This devout Catholic used the ondes Martenot in his *Turangalila-Symphonie*. Another piece, which uses the instruments which were available to him in a Nazi prisoner of war camp, is the *Quartet for the End of Time*.

ANSWER: Olivier Messiaen

11. Name these early modern rationalist philosophers, for ten points each:

[10] This French founder of modern philosophy claimed to be able to rationally deduce the existence of God and the soul from his own existence. The statement "I think, therefore I am" is found in his *Discourse on Method*.

ANSWER: René Descartes

[10] This German rationalist is famous for his *Monadology* and the philosophy of optimism. He was parodied by Voltaire in *Candide* and discovered Calculus at roughly the same time as Newton.

ANSWER: Gottfried Wilhelm Leibniz

[10] This Jewish rationalist from Portugal was famous for his pantheism. His treatise *Ethics* denies mind-body dualism and tries to rationally derive ethical maxims.

ANSWER: Baruch Spinoza

12. FTPE, answer these related molecular biology questions.

[10] This term refers to the general biological process through which cells communicate with each other and within themselves. The involve namesake pathways and cascades through which stimuli are amplified and translated into cellular responses.

ANSWER: signal transduction

[10] This class of proteins is involved in many secondary messenger cascades and is the namesake of a class of coupled receptors on cell surfaces that can activate signal transduction pathways. When activated by the binding of a ligand, GDP is exchanged for GTP.

ANSWER: G proteins or guanine nucleotide-binding proteins

[10] This secondary messenger is produced from ATP when a G protein associates with adenylyl cyclase. It promotes downstream effects by interacting with protein kinase A.

ANSWER: cyclic AMP or cyclic adenosine monophosphate

13. Answer some questions about World War II literature, FTPE:

[10] This American author chronicled his experiences in World War II in novels such as *From Here to Eternity*, *The Thin Red Line*, and *Whistle*.

ANSWER: James **Jones**

[10] This Romanian-Jewish author wrote about his experiences during the Holocaust in a trilogy whose books are titled *Night, Day, and Dawn*.

ANSWER: Elie **Weisel**

[10] This novel by John Hersey focuses on the lives of six individuals in the aftermath of the atomic bombing of Japan, which expanded on an article he had previously written for *The New Yorker*.

ANSWER: **Hiroshima**

14. Name these Jewish holidays, for ten points each:

[10] This holiday on the 14th of Adar celebrates the events of the book of Esther. Traditions include scorning the Persian vizier Haman, wearing costumes, and copious amounts of drinking.

ANSWER: **Purim**

[10] This holiday beginning on the 15th of Tishrei celebrates the structures in which the Israelites lived after their exile from Egypt. It is celebrated by constructing and living in the huts from which the holiday gets its name.

ANSWER: **Sukkot**

[10] This holiday commemorates the destruction of the First and Second Temples in Jerusalem, both of which were destroyed on the namesake date.

ANSWER: **Tisha B'Av** or **Ninth of Av**

15. Characters in this novel include Colonel Munro, the commanding officer of Fort William Henry, and the villainous Huron chief, Magua, FTPE:

[10] Uncas is the title character of what novel set during the Seven Years War?

ANSWER: *The **Last of the Mohicans***

[10] *The Last of the Mohicans* is the second novel in the *Leatherstocking Tales* pentalogy of this 19th century American writer.

ANSWER: James Fenimore **Cooper**

[10] This character is the titular character of the first *Leatherstocking Tales* novel, *The Deerslayer*, and the protagonist of the pentalogy.

ANSWER: Nathaniel "**Natty**" **Bumpo** [accept either]

16. Name some catalysts for reform in Japanese history, FTPE:

[10] This American naval officer visited Japan in 1854 and negotiated the Treaty of Kanagawa.

ANSWER: Commodore Matthew **Perry**

[10] This Japanese emperor oversaw the creation of the Diet and the modernization of Japan after the end of the Tokugawa Shogunate.

ANSWER: **Meiji**

[10] This man became Prime Minister after his Democratic Party of Japan defeated the Liberal Democrats in 2009. He may be less powerful than another man in his party, Ichiro Ozawa.

ANSWER: Yukio **Hatoyama**

17. After seeing a viral youtube video of a three-year old crying over him, he surprised her by visiting her home, FTPE

[10] Name this 16 year old Candian pop star with hits like "One Less Lonely Girl" "One Time" and "Love Me"

ANSWER: Justin **Bieber**

[10] This CD, Justin's debut album, featured all of the above singles, as well as "Favorite Girl"

ANSWER: **My World**

[10] On Justin Bieber's most recently released single, "Baby" he trades verses with this rapper, who starred in *Crash* and has hits of his own like "Stand Up" "Southern Hospitality" and "Runaway Love"

ANSWER: **Ludacris**

18. The one-eyed tailor Petrovich is the maker of the title article, FTPE:

[10] The poor government clerk Akaky Akievich Baschmachkin saves up to by the titular article of clothing only to have it stolen from him in a mugging in what short story?

ANSWER: *The **Overcoat***

[10] *The Overcoat* is by this Ukranian author who wrote about Chichikhov's scheme to make money off deceased serfs in *Dead Souls*.

ANSWER: Nikolai **Gogol**

[10] The townsfolk bribe and kowtow to the civil servant Khlestakov in this Gogol play, only to discover in the end that he is not the titular official that they were expecting.

ANSWER: *The **Inspector General** or The **Government Inspector***

19. China is bordered by 14 different countries. Answer questions about its neighbours FTPE.

[10] Located across the Yalu River from China, James Bond was imprisoned after a botched mission in this country at the beginning of the movie *Die Another Day*. More recently, Bill Clinton visited its capital, Pyongyang, last summer.

ANSWER: **North Korea**

[10] In 1979, China briefly invaded this southern neighbour, as punishment for its invasion of Cambodia. However, this country is more famously remembered for defeating the US in a bloody war, invoking a famous picture of a helicopter taking off from the American Embassy in Saigon.

ANSWER: **Vietnam**

[10] This land-locked neighbour, surrounded entirely by China and Russia, was actually part of China until 1923. You might know it for camels, yurts and capital Ulan Bataar.

ANSWER: **Mongolia**

20. Answer these questions regarding fluid dynamics FTPE:

[10] This term provides a measure of a fluid's internal resistance to flow and can also be considered a measure of the fluid's resistance to a shear or tensile stress.

ANSWER: **viscosity**

[10] The stress-strain rate curve for such a fluid passes through the origin and is linear. The slope of the line is known as the viscosity.

ANSWER: **Newtonian** fluid

[10] A fluid with constant density can be assumed to have this property, which means that the equation of continuity for the fluid can be simplified to show that the divergence of the velocity is zero.

ANSWER: **incompressible**

21. Identify a common sculptural theme throughout western art, FTPE:

[10] Perhaps the most famous of these sculptures was Michaelangelo's, instead of depicting the titular figure standing above the defeated Goliath, shows him carrying a sling over his shoulder preparing for the battle to come

ANSWER: **David**

[10] An earlier statue of David, the first freestanding nude since antiquity, was sculpted by this man who also sculpted the Gattamelata and a sculpture of St. George.

ANSWER: **Donatello**

[10] Yet another David was commissioned by the Medici from this man who showed David triumphantly posing over the head of the slain Goliath. This man also made an equestrian statue of Bartolemeo Colleoni and was notably the teacher of Leonardo Da Vinci

ANSWER: Andrew del **Verrocchio**