

## ROUND 6

1. This poet's "I wake and feel the fell of dark, not day" is one of the "Terrible Sonnets" from his time as a professor in Ireland. He wrote, "My heart [...] / Stirred for [...] the mastery of the thing!" in a poem dedicated "To Christ our Lord" about "morning's minion" the (\*) "dapple-dawn-drawn Falcon". The work that is considered this poet's masterpiece commemorates the death of five nuns and is titled "The Wreck of Deutschland". For 10 points, name this poet of "The Windhover" and "God's Grandeur", who began "Glory be to God for dappled things" in his poem "Pied Beauty".

ANSWER: Gerard Manley Hopkins

1. Adherents of this religion believe in the god Jah. For 10 points each,  
[10] Give this Jamaican religion whose adherents believe Haile Selassie is the reincarnation of Jesus Christ, attend *nyabingi* sessions, are part of mansions such as Bobo Ashanti, listen to reggae, and include Bob Marley.

ANSWER: Rastafarianism [or Rastafari movement]

[10] Rastafarians smoke this plant, called "ganja", at *nyabingi* sessions. THC is the potent psychoactive chemical in this plant, which is legal in some places for "medicinal" purposes.

ANSWER: cannabis [accept marijuana, accept weed]

[10] This primary sacred text of Rastafarianism was written by Robert Athlyi Rogers and consists of 4 books, the second of which proclaims Marcus Garvey as one of three apostles of God.

ANSWER: Holy Piby

2. This author used the term "modes" to describe the consequences, or perhaps the properties, of God. He posits that since the Torah was a political constitution of ancient Israel and that state no longer exists, the Torah is (\*) invalidated. He also claimed the Torah was not written by Moses. His most famous work is laid out as a list of axioms and systematically refutes Cartesian dualism. In that work, he sets forth the theory that God and nature are one and the same, also known as pantheism. He was excommunicated by the Jewish community in Amsterdam. For 10 points, name this philosopher of *Tractatus Theologico-Politicus* and *Ethics*.

ANSWER: Baruch Spinoza

2. The atmospheric component of this event is called the "Southern Oscillation" and was studied extensively by Gilbert Walker. For 10 points each,

[10] Name this weather anomaly of increased ocean warming in the east Pacific, caused by weakened trade winds, which brings massive storms to central Pacific tropical paradises like Tahiti.

ANSWER: El Niño-Southern Oscillation

[10] El Niño can be characterized by an increase in this atmospheric cycle. This cycle occurs within 30° north or south of the equator and sees warm air rise and move away from the equator where it cools and precipitates.

ANSWER: Hadley cell

[10] El Niño typically hurts this country's economy because it disrupts the Pacific Humboldt Current; however the most recent El Niño brought much needed rainfall to Santiago, the capital of this South American country.

ANSWER: Chile

3. **One work for this instrument begins with a C-minor *Grave* section which uses one hundred twenty-eight notes, but then changes to an *Allegro di molto e con brio*. Muzio Clementi manufactured this instrument and developed a more modern technique for playing it. Carl (\*) Czerny wrote notable works for virtuoso practice of this instrument, and an extra-large hand-span allowed Rachmaninoff to succeed at it. John Adams created a “prepared” one of them. Beethoven’s *Pathétique* Sonata is written for this instrument, and Thelonious Monk was a famous jazz player of this instrument. For 10 points, name this instrument for which Chopin wrote numerous Etudes.**

ANSWER: **Pianoforte**

3. Battles during this war were fought at Cerro Gordo and Buena Vista. For 10 points each, [10] Name this war fought under James K. Polk against its namesake country which was ended by the Treaty of Guadalupe Hidalgo.

ANSWER: **Mexican-American War**

[10] Winfield Scott landed with his army in this port city of Mexico, after which he repeatedly defeated the Mexican Army on his march towards Mexico City.

ANSWER: **Veracruz**

[10] This Virginia man served as an engineer during the Mexican-American war and found routes for Scott’s troops through tough terrain, leading to American victories like Cerro Gordo. He co-names a university with his grandfather-in-law.

ANSWER: Robert E. **Lee**

4. **In one work by this artist, a row of square columns separates the Angel Gabriel from a Virgin framed by a drawn-back curtain, and in another of his works a faun wears a helmet that covers his entire head behind another faun that blows a Triton’s shell into a sleeping god’s ear as his lover looks on. This artist of *The Annunciation* and (\*) *Venus and Mars* depicted Zephyrus turning Chloris into Flora as the three Graces dance in another work, while another painting of his shows Ora extending a cloth to dress the naked title goddess as she arrives on a seashell. For 10 points, name this artist of *Primavera* and *The Birth of Venus*.**

ANSWER: Sandro **Botticelli** or [Alessandro di Mariano di Vanni **Filipepi**]

4. Beneatha rejects George Murchison for Joseph Asagai in one side plot in this play. For 10 points each, [10] Name this play in which the Younger family must decide how to spend a \$10,000 insurance check. Mama opts to buy a house in the all-white neighborhood, Clybourne Park.

ANSWER: **A Raisin in the Sun**

[10] This protagonist of *A Raisin in the Sun* wants to invest the insurance money in a liquor store. His partner Willy Harris runs off with this character’s cut of the money.

ANSWER: **Walter** Lee Younger

[10] Hansberry took the title *A Raisin in the Sun* from this Langston Hughes poem, which asks, “What happens to a dream deferred?” Hughes was a leading figure in this city’s namesake Renaissance in the 1920s.

ANSWER: **“Harlem”**

5. One leader in this modern-day country who won the Battle of Annual [ah-nu-AHL] for the Republic of the Rif was Abd el-Krim. This country's Istiqlal, or Independence Party was suppressed after riots that led to Mohammed V being replaced by Mohammed Ben Aarafa. Currently opposed by the (\*) Polisario movement in a separatist region, this country was the subject of debate during the Algeciras Conference, and was further the site of tension after the battleship *Panther* appeared off this country's coast. Along with Mauritania, this country was originally supposed to administer the Western Sahara. For 10 points, name this country that was the site of the Casablanca Conference.

ANSWER: Kingdom of **Morocco** or **al-Maghrib**

5. Its violin solo opens its titular character's theme, while the first phrase opens the sultan's theme. For 10 points each,

[10] Name this musical composition based off the *Thousand and One Nights*, composed around such figures as Sinbad and a Kalendar Prince.

ANSWER: **Scheherazade**

[10] Scheherazade was written by this composer of fantastical works such as the *Golden Cockerel* and the *Tale of Tsar Saltan*.

ANSWER: Nikolai **Rimsky-Korsakov**

[10] The Sultan's theme from *Scheherazade* uses this type of musical scale. In the key of B-flat, this type of scale would include the notes B-flat, C, D, E, F-sharp, and G-sharp.

ANSWER: **Whole tone** scale

6. A formula named for Legendre gives the largest exponent of a prime that divides a number after this operation has been performed on it. This operation can be approximated by the formula  $\text{root}(2 \pi n)$  times quantity  $(n \text{ divided by } e)$  to the  $n$  in a method named for (\*) Stirling's. This operation is performed for numbers in the denominator of the Taylor series and a permutation is typically defined as this operation on  $n$ , divided by this operation on  $(n \text{ minus } k)$ . This operation performed for the number 4 would be  $4 \times 3 \times 2 \times 1$ . For 10 points, name this mathematical operation symbolized by an exclamation point.

ANSWER: **factorial**

6. Art critic John Ruskin referred to one of this man's paintings as a work "to show what he could do with so ugly a subject." For 10 points each:

[10] Name this Englishman who painted a small boat that can be seen floating on the Thames as a black train at right emerges from a thick haze in his *Rain, Steam, and Speed*.

ANSWER: Joseph Mallord William **Turner**

[10] In this painting by Turner, the title ship is pulled to Rotherhithe by a black tugboat with a fuming smokestack as the sun sets at right.

ANSWER: *The **Fighting Temeraire** Tugged To Her Last Berth To Be Broken Up, 1838*

[10] Turner's depiction of this city shows a woman in blue and white directing builders as a group of children sit on the riverbank observing a toy boat at center. He would later paint a *Decline* of this city.

ANSWER: **Carthage** [accept *Dido Building Carthage*] <GG>

7. **One of this man's writings stated that the US must choose between "a modern feudalism", communism, or the policy he proposed therein. He argued against the Cumberland Telephone & Telegraph Company in a case for the Public Service Commission of his state and was elected to that body on an anti-Standard Oil platform. He implemented policies that gave (\*) night courses to increase the literacy rate and promised as governor to build a school in walking distance of every child. He campaigned using slogans such as "Every man a king" and advocated for a "Share Our Wealth" program. For 10 points, name this Louisiana politician nicknamed "Kingfish."**

ANSWER: Huey Pierce **Long**

7. Answer the following about some people associated with the Trojan War. For 10 points each,  
[10] The war began when this son of Priam chose Aphrodite to give the Golden Apple to, and abducted Helen of Sparta to go to Troy with him.

ANSWER: **Paris**

[10] Ajax the Lesser raped this seer during the fall of Troy. While she had the power of prophecy, she was cursed to never be believed by Apollo.

ANSWER: **Cassandra**

[10] The raping of Cassandra took place in a temple of this deity, whose statue was supposedly knocked over. This deity then cursed the Trojan Army for not stoning Ajax the Lesser, which Odysseus had suggested.

ANSWER: **Athena**

8. **In one novel by this author, the Marquesa de Montemayor adopts Pepita and is mocked at the theater by Camila Perichole. Miss Fairweather is declared Miss Atlantic City right before a flood in one play by this author, in which George Antrobus reinvents the wheel during an ice-age. This author wrote about Brother (\*) Juniper, who investigates the lives of the victims of the collapse of the titular Incan bridge. In his most famous work, George Gibbs courts Emily Webb, who opts to re-live her 12<sup>th</sup> birthday. For 10 points, name this author of *The Skin of Our Teeth*, *The Bridge of San Luis Rey* and *Our Town*.**

ANSWER: Thornton **Wilder**

8. This device's namesake constant roughly corresponds to its stiffness. For 10 points each,  
[10] Name this simple harmonic oscillator whose force is given by the equation  $F = kx$ , or Hooke's Law.

ANSWER: **spring**

[10] Multiplying  $2\pi$  times the square root of quantity mass divided by the spring constant gives this value, symbolized T, of the sinusoidal curve that models the motion of a spring.

ANSWER: **period**

[10] The spring constant, k, is equal to mass times this quantity squared. The energy eigenvalues for a quantum harmonic oscillator can be found by multiplying this quantity times h-bar times quantity (n plus one-half).

ANSWER: **angular frequency [prompt on partial]**

9. **One ruler of this city married Amytis of Media and won the Battle of Carchemish against the Egyptians. Esarhaddon rebuilt this city after the assassination of his father who supposedly had it sacked and razed, Sennacherib. After the Battle of Opis, the Achaemenids were able to capture this city by (\*) diverting the Euphrates river to make it more shallow. This city's most famous ruler proclaimed a law code expounding the principle "an eye for an eye", Hammurabi. For 10 points, name this Mesopotamian city where Nebuchadnezzar II supposedly built the Hanging Gardens.**

ANSWER: **Babylon**

9. For 10 points each, identify some works of literature by the prostitutes in them.

[10] The title character shares a basket of food with her fellow travelers, before they convince her to sleep with a Prussian officer so they can continue their journey, in this Guy de Maupassant short story.

ANSWER: "**Boule de Suif**" [or "**Ball of Fat**"]

[10] Candy accompanies the men on a boating excursion and sleeps with the nervous virgin Billy Bibbit after McMurphy smuggles her into the titular mental hospital of this novel.

ANSWER: ***One Flew Over the Cuckoo's Nest***

[10] In this other novel, Wang Lung, initially a hard worker and faithful husband, is corrupted by wealth into buying the concubines Lotus Flower and Pear Blossom.

ANSWER: ***The Good Earth***

**10. One formula to calculate this quantity contains the effective nuclear charge divided by covalent radius squared, while another formula to calculate a relative form of this quantity takes the square root of bond dissociation energies. Mulliken proposed to calculate this quantity as the average of (\*)** electron affinity and ionization energy. If the difference in this quantity for two atoms is greater than 2.0, then the bond between those two atoms will be ionic. In the Pauling scale, fluorine has the highest value, 4.0, for this quantity. For 10 points, name this property, the tendency of atoms to attract the shared electrons in a bond.

ANSWER: **electronegativity**

10. This work includes word-by-word analysis of some gardening spells. For 10 points each,

[10] Name this work in which the author describes the role of magic in gardening for natives of the Trobriand Islands.

ANSWER: ***Coral Gardens and their Magic***

[10] *Coral Gardens and their Magic* is written by this social anthropologist, who also wrote such works as *Sex and Repression in Savage Society* and *Argonauts of the Western Pacific*.

ANSWER: Bronisław **Malinowski**

[10] *Sex and Repression in Savage Society* rejects the universality of this idea by showing that psychosexual development was caused by the power of maternal uncles and not fathers.

ANSWER: **Oedipus Complex** <TC>

**11. In one scene, this novel's protagonist mistakenly drives away the Truands. One character in this novel gives the protagonist a drink of water while he is on the stocks; in return, the protagonist saves that character from the gallows by taking her to a cathedral where she is protected by the law of sanctuary. That character in this novel "marries" the poor poet Pierre (\*) Gringnore and has a pet goat, Djali. Claude Frolo falls to his death in this novel after the titular bell-ringer pushes him off a certain cathedral in Paris. For 10 points, the gypsy Esmeralda is murdered despite the efforts of Quasimodo in what novel by Victor Hugo?**

ANSWER: ***Hunchback of Notre Dame*** [accept ***Notre dame de Paris***]

11. Answer the following about Northern Montana, I mean, the Dominion of Canada. For 10 points each:

[10] This first prime minister of Canada came to power after the passing of the British North America Act in 1867 and negotiated the transfer of Prince Rupert's Land, the North-Western Territory, and British Columbia to Canada.

ANSWER: Sir John Alexander **Macdonald**

[10] Macdonald also dealt with the Red River Rebellion led by Louis Riel, who led this ethnic group in Canada. They are of mixed native and European descent and are analogous to the Mestizos of Latin America.

ANSWER: **Métis** [may-TEE or may-TEES, but be lenient with the pronunciation]

[10] Macdonald resigned for a five-year period due to a political scandal involving the creation of a transcontinental one of these. In the US, one of these was called the Overland Route and was inaugurated with a Golden Spike.

ANSWER: Transcontinental **Railroad**

**12. The Prandtl-Glauert transformation predicts a singularity as an object approaches this quantity, however, in reality, a vapor cone of condensed water forms around the object. This value can be calculated as the square root of the quantity “bulk modulus divided by density” according to the Newton-Laplace equation.** (\*) Phonons propagate at this value for a given solid. This quantity varies with the type and temperature of the medium, and is about four times faster in water than air. An object’s speed divided by this quantity gives the Mach number. For 10 points, give this value which is about 340 meters per second in 15°C dry air at sea-level.

ANSWER: **speed of sound**

12. The master-turned-slave Pozzo goes blind and the slave-turned-master Lucky becomes mute. For 10 points each,

[10] Name this play where Vladimir and Estragon cannot remember if they are in the right place or at the right time to meet the title character, who never shows up.

ANSWER: ***Waiting for Godot***

[10] This playwright wrote a work about Hamm, Clov, Nell and Nagg titled *Endgame*, as well as a play for a mime, *Act Without Words*, in addition to writing *Waiting for Godot*.

ANSWER: Samuel **Beckett**

[10] In Beckett’s play *Krapp’s Last Tape*, the title character sits on stage, listening to recordings of his past self on his 69<sup>th</sup> birthday and eating excessive amounts of this fruit.

ANSWER: **bananas**

**13. One nobleman who married into this house espoused a descendant of Edmund Crouchback, the future queen mother Blanche. That man was John of Gaunt. This family was defeated at such battles as Northampton and Towton, and they fought against the Earl of Warwick, known as the (\*)**

“Kingmaker”. One member of this family was increasingly overshadowed by his French wife, Margaret of Anjou, and the death of Richard III at Bosworth Field secured victory for a claimant to the throne from this family. For 10 points, name this family whose descendant Henry VII ascended to the throne after the Wars of the Roses against the rival House of York.

ANSWER: House of **Lancaster**

13. These molecules undergo VDJ recombination in order to gain unique antigen-specificity. For 10 points each,

[10] Name these molecules composed of a heavy and a light chain arranged in a Y shape, which are part of the third-line of immune defense and attack specific antigens or foreign invaders.

ANSWER: **antibodies** [accept **antibody**, accept **immunoglobulins**]

[10] Antibodies are produced by plasma cells, which are a subset of these cells. Memory cells are another subset of this type of white blood cell, which contrasts with T cells and Natural Killer cells.

ANSWER: **B** lymphocytes [accept **B** cells]

[10] This first antibody to appear after exposure to an antigen is useful for diagnosis, as later in the course of infection it gives way to IgG. This is the only pentamer antibody, meaning it has 5 binding sites for antigens.

ANSWER: **IgM** [or immunoglobulin **M**]

14. **Near the end of his life, this man met with one of his sons in Goshen and blessed his grandsons Ephraim and Menasseh. This man's oldest son set up that meeting in Goshen and had earlier slept with his father's concubine. That son, Ruben, did not prevent his brothers from selling this man's favorite son into (\*) slavery in Egypt. A trick by his uncle Laban led this man to have 13 children by 4 women after marrying Leah before his preferred bride, Rachel. For 10 points, name this third forefather, who stole his brother Esau's birthright from his father Isaac, and whose sons include Joseph.**

ANSWER: **Jacob** [accept **Israel**; accept **Yakov**, accept **Yacoub**] <BK>

14. **We have the anti-vaccination movement to thank for the most recent outbreak of this virus. For 10 points each,**

[10] **Name this highly contagious virus which, according to the CDC, has spread to over 150 people across 17 different US states since January 2015, most likely after people were exposed to it at Disneyland.**

ANSWER: **measles**

[10] **The measles vaccine, called MMR, also treats mumps and this other, milder condition similar to measles. This virus causes a rash to form on the face, which then spreads to the body and typically disappears within 3 days.**

ANSWER: **rubella**

[10] **People in the anti-vaccination camp often make the scientifically unfounded claim that measles causes this disorder. Asperger's syndrome is considered a type of this disorder.**

ANSWER: **autism** spectrum disorders

15. **A major transition in their architecture was from the hypostyle layout to the four-iwan layout. The "pencil" variety of a structure that flanks these buildings was pioneered by Sinaan. The Mount of Olives overlooks the golden top on one of these structures, and another was created out of sun-dried bricks during the (\*) Mali Empire and is located at Djenné. One of these places in Cairo also names the oldest continuously-run university in the world; that one is al-Azhar. Mehmet the Conqueror converted the Hagia Sophia into one of these. For 10 points, name these edifices of Islamic worship, exemplified by the Alhambra in Granada and the "Blue" one in Istanbul.**

ANSWER: **mosques** <FK/TC>

15. **Answer the following about Neolithic archaeological sites. For 10 points each:**

[10] **This civilization's main archaeological sites include Mohenjo Daro and Harappa. Its script has not yet been deciphered, and most of it was located in what is now Pakistan along its namesake river.**

ANSWER: **Indus River Valley Civilization**

[10] **The Neolithic site of Çatalhöyük [chah-tahl ho-yook], which is among the best preserved in the world, is located in this modern-day nation, near the city of Konya. The site is accessible from Ankara by car.**

ANSWER: **Republic of Turkey**

[10] **This present-day nation and nearby islands such as Gozo are home to such megalithic temple sites as the Ġgantija [jih-GAHN-ti-ya], Tarxien [TAHR-shee-ehn] and Ħaġar Qim [hah-jahr-'EEM].**

ANSWER: **Malta**

16. **This sculptor's depiction of an author with his head and body moving in opposite directions caused so much outrage that it was never cast in bronze, and this sculptor created a work showing a head attached to a roughly hewn block of marble, a portrait of his lover Camille Claudel. This artist of *Thought* and *Monument to (\*) Balzac* sculpted a work depicting Paolo and Francesca embracing and performing the title action as part of his Dante-inspired work *The Gates of Hell*. For 10 points, name this**

French sculptor of *The Kiss* who portrayed a man sitting on a rock and resting his head on his bent arm in *The Thinker*.

ANSWER: Auguste Rodin <GG>

16. Name some island nations of the Indian Ocean, For 10 points each,

[10] This prominent island off the coast of Mozambique is the fourth-largest in the world. Its capital is at Antananarivo, and its official languages are both Malagasy and French.

ANSWER: Republic of Madagascar

[10] This island nation is the smallest Asian country by population and size, and lies off the coast of India in the Laccadive Sea. It is made up of 26 major atolls, and its capital is at Malé.

ANSWER: Republic of the Maldives

[10] This island nation is the southernmost state of the Arab League, and has its capital at Moroni. It contests the island of Mayotte with France.

ANSWER: Union of the Comoros

17. **This deity in one form was known as a patron of the blind on nights with a new moon, because according to legend, he loses his eyes then. This deity's forms included "The Elder" and "The Uniter", for which this deity wears a double crown. This god painted his (\*) boat gray to hide that it was made of wood and not stone in order to win a contest, and he later bit off another deity's testicle causing the infertility of the desert. These events led him to win an eighty-year feud with the killer of this deity's father, Set. Associated with the eye of Wedjat, For 10 points, name this falcon-headed son of Isis and Osiris.**

ANSWER: Horus

17. The endo transition state is preferred for this reaction. For 10 points each,

[10] Give this doubly-eponymous reaction in which cyclohexane is formed from the cycloaddition of a diene and dienophile.

ANSWER: Diels-Alder reaction

[10] The dienophile of the Diels-Alder reaction is typically an alkene with an electron withdrawing group. Alkenes, or olefins, are characterized by this type of bond between two carbons.

ANSWER: double bond

[10] The Diels-Alder reaction works because pi electrons from the electron-rich diene move to the electron-poor dienophile, forming this strongest type of covalent bond. Single bonds are typically this type of bond.

ANSWER: sigma bonds



18. In one novel by this author, a flood resurfaces a dead stranger, prompting Mehring's farm workers to give him a proper burial. In another of this author's novels, Rosa considers going into exile in Paris but is discouraged after meeting her childhood friend Baasie. In addition to *The (\*) Conservationist*, this author wrote about a character who drives a white couple's *bakkie*. In that novel by this woman, Maureen and Bamford Smales flee Johannesburg for the village of their former servant after the Black Revolution. For 10 points, name this anti-Apartheid, South African author of *Burger's Daughter* and *July's People*.

ANSWER: Nadine Gordimer

18. In this film, the protagonist has a magician transmit the words "Asa Nisi Masa" to his assistant, who then writes the words in large letters on a chalkboard. For 10 points each,

[10] Name this film in which Guido, a film director, spends time at a spa to work on his new film, with scenes interspersed of his childhood memories and fantasies.

ANSWER: 8 ½ [or Otto e mezzo]

[10] This director of 8 ½ created a film about Marcello Rubini's travels through Rome, including a famous scene in which he and Sylvia wade into the Trevi Fountain, in *La Dolce Vita*.

ANSWER: Federico Fellini

[10] Fellini was a director from the neorealist movement of this country, also the setting of Roberto Rossellini's *Rome, Open City* and Vittorio di Sica's *Bicycle Thieves*.

ANSWER: Italy [or Repubblica Italiana, Italian Republic] <GG>

19. One character in this series turns down a position at Google because she doesn't want to be "fill some quota" for Asian, female employees. The protagonist of this series has implied homosexual relations with Tim Corbet at Sentinel and buries his class ring at a Civil War memorial. One character in this series has a rendezvous with the protagonist at the Cathedral Heights (\*) Metro Station. Rachel Posner is stalked and killed by the protagonist's Chief of Staff, Doug Stamper, in this series, in which billionaire Raymond Tusk catalyses the impeachment of President Walker. Frank Underwood goes from House majority whip to Vice President to President in, for 10 points, what series whose third season just premiered on Netflix?

ANSWER: House of Cards <FK>

19. This character has a brief affair with Milady de Winter. For 10 points each,

[10] The Comte de Rochefort arrests this character and takes him to Cardinal Richelieu. He presents Milady de Winter's letter of pardon and impresses Richelieu enough to promote him to lieutenant.

ANSWER: D'Artagnan

[10] D'Artagnan prepares to fight a duel with each of these three characters, whose motto is "All for one, one for all", collectively known as The Three Musketeers.

ANSWER: Athos, Porthos, and Aramis

[10] D'Artagnan and the Three Musketeers were created by this French author who also wrote about Edmond Dantès transformation into the title character in *The Count of Monte Cristo*.

ANSWER: Alexandre Dumas, père

20. A **high concentration of nutrients draws water into the cells of this tissue creating bulk flow, according to Ernst Munch's Pressure Flow Hypothesis. In a dicot stem cross-section, this tissue is found closer to the epidermis than its counterpart. Companion cells in this tissue perform the necessary metabolic functions for nearby cells which contain enlarged (\*) plasmodesmata but lack a nucleus and organelles at functional maturity. Those nearby cells are called sieve tube elements. For 10 points, name this vascular tissue that transports sugar and nutrients both up and down plants, as opposed to xylem.**

ANSWER: **phloem**

20. Answer the following about everyone's favorite revolution: the Industrial Revolution! For 10 points each:  
[10] This major city was a center of the Industrial Revolution in England, known as "Cottonopolis" for its major textile mills. It was also the site of the Peterloo Massacre, and its namesake "School" advocated for free trade.

ANSWER: **Manchester**

[10] Versions of these devices, which use heated water to produce work, were invented by such people as Thomas Newcomen, who used them in mines, and James Watt, who manufactured them with Matthew Boulton.

ANSWER: **Steam Engines**

[10] The first British versions of these devices were made by Jethro Tull. They allow automatic seed dispersion into the ground without having to dig and recover the soil.

ANSWER: **Seed Drills**

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**TB. One of this author's protagonists falls in love with Madame Chauchat while visiting Joachim Ziemssen. Serenus Zeitblom narrates one work by this author about Adrian Leverkuhn who intentionally contracts syphilis to enhance his artistic creativity. In addition to (\*) *Buddenbrooks*, this author contrasted Ludovico Settembrini and Leo Naphta in a novella where Hans Castorp goes to a sanatorium in the titular locale. A cholera epidemic rampages the titular city where Gustav von Ashenbach lusts for the boy Tadzio. For 10 points, name this German author of *Death in Venice* and *The Magic Mountain*.**

ANSWER: Thomas **Mann**