

2014 BELLum Omnium Contra Omnes**FINALS Packet 1: Tossups**

1. This man argued that Jesus knew sin and evil when he cried out “why hast thou forsaken me” on the cross. In one of his works, this man introduced the idea of respecting others as “non-interference” and wrote about three spheres of righteousness in *Elements of the Philosophy of Right*. This philosopher argued that world history is man’s consciousness awakening to freedom and divided another work into “being,” “essence,” and “concept”. This author of *Science of Logic* described a “struggle to the death” between two self-conscious beings in his master-slave dialectic. For 10 points, name this German philosopher who wrote *The Phenomenology of Spirit*.

ANSWER: Georg Wilhelm Friedrich Hegel

2. In this work, one character plays pool and makes money off a nobleman, then throws that money at his lover’s feet. When guests leave a party, the title character of this work describes her need for freedom in “*Sempre libera.*” During that party in this work, Gastone tells the title character that, while she was ill, Alfredo Germont visited her house every day. After Baron Douphol refuses to give a toast, Alfredo sings “*Libiamo ne’ lieti calici,*” a drinking song. After leaving Alfredo to save his family’s reputation, the title woman of this opera eventually dies of tuberculosis. For 10 points, name this opera about the courtesan Violetta Valéry by Giuseppe Verdi.

ANSWER: *La Traviata* [or *The Fallen Woman*]

3. The Kolmogorov forward equation is equivalent to a probability density function formulated by this man and Adriaan Fokker. This man extended Wien’s law to low frequencies and disproved a prediction of the Rayleigh-Jeans law. In addition to resolving the ultraviolet catastrophe, this man created a law that raises wavelength to the negative fifth power, his namesake law of radiation, which finds the energy of a blackbody. His constant multiplied by frequency yields the energy of a photon and has a reduced form of h over two pi. For 10 points, name this German recipient of the 1918 Nobel Prize in Physics who developed quantum theory.

ANSWER: Max Karl Ernst Ludwig Planck

4. This dynasty went through a period of rapid and violent shifts in power named for its one-time capital Samarra. Under al-Muwaffaq, this dynasty suppressed the Zanj slave revolt. One offshoot of this dynasty was created by Sabuktigin after the death of Alp Tigin; that offshoot was the Ghaznavid Empire. It was established after the Battle of Zab, with Ab’ul As-Saffah as its first caliph, and its last ruler Al-Mustasim was wrapped in a carpet and trampled by horses by order of Hulagu Khan. One leader of this dynasty was served by the vizier Yahya; that leader was Harun al-Rashid. For 10 points, name this caliphate centered in Baghdad that succeeded the Umayyad Caliphate.

ANSWER: Abbasid Caliphate [or Abbasid Dynasty; or *al-Khilāfah al-‘Abbāsīyyah*]

5. A sequel to this work, *Lélio*, portrays the central character awakening and conducting an orchestra. In the third movement of this work, the English horn and oboe depict a conversation between two Alpine shepherds while the timpani interrupts with claps of thunder. The strings play *col legno* in the final movement of this work, in which the bassoons and tubas play a sombre *Dies Irae*, followed by the trombones, as part of a witches’ sabbath. The *idée fixe* appears in all five of its movements and represents the composer’s love for the actress Harriet Smithson. For 10 points, name this symphony by Hector Berlioz about a young artist poisoned with opium.

ANSWER: *Symphonie Fantastique: Épisode de la vie d’un Artiste ... en cinq parties* [or *Fantastic Symphony: An Episode in the Life of an Artist, in Five Parts*]

6. An allyl vinyl form of these compounds can undergo the Claisen rearrangement. This functional group is present in the polar solvent tetrahydrofuran. *Tert*-butyl hydroperoxide and an alcohol containing a double bond react to create these compounds in the Sharpless epoxidation. The aforementioned reaction creates epoxides, cyclic forms of this group. The Williamson reaction creates one of these compounds from an alcohol and an organohalide, and these groups connected in a ring form the “crown” type. A diethyl form of this functional group serves as an anesthetic. For 10 points, name these compounds that consist of an oxygen bonded to two alkyl or aryl groups.

ANSWER: ethers

7. This state's highest point is Britton Hill, and the Chattahoochee and Flint Rivers meet in the north of this state to drain into Apalachicola Bay, which is due east of Cape San Blas. Although it's not North Carolina, the barrier island Sanibel is a popular tourist destination south of this state's Charlotte Harbor. The cities of Sanford, Daytona Beach, and Winter Haven lie along its I-4 corridor. Cape Sable separates a bay named for this state from an island group known as its namesake keys. Cape Canaveral, site of the Kennedy Space Center, is on the east coast of this state. For ten points, name this state home to Miami and Orlando, with capital at Tallahassee.

ANSWER: State of **Florida** [or *Estado de Florida*]

8. In the upper right of this painting, a saint holds a bent piece of iron, while in the upper left a yellow-robed St. Peter dangles a pair of keys in his hand. Icy clouds swirl on the top half of this painting and surround a purple and red clad Virgin Mary, who looks over the title action, while St. John the Baptist and Christ form a triangle in position with her. At the far right of this work, a mourner carries a large silver and gold crucifix, and at the bottom left, a child bearing a torch points to the title figure. At the center of this work, St. Stephen and St. Augustine bend over the corpse of the title armored figure. For 10 points, name this painting depicting the funeral of Don Gonzalo Ruíz, a work by El Greco.

ANSWER: *The **Burial of the Count of Orgaz***

9. One figure tells this figure to make five hundred wooden stakes after this figure kills the stone-giants, the only things capable of crossing the Waters of Death. This figure is unable to fulfill a challenge to stay awake for six days. Five ominous dreams frighten this figure, but those dreams are interpreted to be good omens by his companion. After the death of his companion, this character journeys to visit Utnapishtim, who recounts the story of the flood. This character also kills Gugalanna, the Bull of Heaven, sent by Ishtar after he had spurned her advances. For 10 points, name this two-thirds divine Sumerian king whose life with his companion Enkidu is described in his namesake epic.

ANSWER: **Gilgamesh** the King [or **Bilgames**]

10. Instead of a cooking vessel, the *fang ding* was a symbol of power during this dynasty. A social structure that developed during this dynasty was based on the four occupations and was known as *fengjian*. This dynasty's first ruler defeated the previous dynasty at the Battle of Muye, a victory that Jiang Ziya helped King Wu achieve. Both the *I Ching* and Sun Tzu's *The Art of War* were written during this dynasty. The partition of the state of Jin during this dynasty marked the end of the Spring and Autumn Period during this dynasty. For 10 points, name this longest Chinese dynasty that ended when King Zheng unified the Warring States under the Qin Dynasty.

ANSWER: **Zhou** Dynasty [or **Zhou Chao**; accept Western **Zhou** or **Xi Zhou**; accept Eastern **Zhou** or **Dong Zhou**; do not prompt on or accept "Northern Zhou" or "Bei Zhou"]

11. In one of this man's early works, a poet roams the countryside, seducing Johanna and Sophie and murdering his best friend Ekhart. Another play by this author of *Baal* depicts a woman who cross-dresses as her invented cousin, Shui Ta, to maintain order in a tobacco shop gifted to her by the gods. This author wrote of the marriage between Polly Peachum and Mack the Knife in another work. In addition to writing *The Good Person of Szechwan*, this playwright described the murder of Katrin and the shooting of Eilif and Swiss Cheese by soldiers during the Thirty Years' War. For 10 points, name this German author of *The Threepenny Opera* and *Mother Courage and her Children*.

ANSWER: Bertolt **Brecht**

12. A dispute in *perichoresis*, which describes relationships in this concept, was instigated by the addition of the *Filioque* clause in the Western Creed. St. Bernard of Clairvaux described this concept using the analogy of a kiss, and the Borromean rings are a visual representation of this concept. While meditating on this concept, St. Augustine came across a boy trying to put the ocean in a hole by using a seashell, who explained that attempting to fully understand this concept was futile. A Bible passage supporting this concept is the Baptismal Formula given by Christ. For 10 points, name this Christian concept that describes God as Father, Son, and Holy Spirit.

ANSWER: Holy **Trinity** [or *Sancta Trinitas*; or *Hogios Triados*]

13. One version of a photograph taken by Roger Fenton during this war shows a road littered with cannonballs. An offensive by French troops at Malakoff during this conflict forced Russia to abandon and destroy its ships in one port city, and a victory by British forces under Lord Raglan during this conflict led to the Siege of Sevastopol. The Black Sea was demilitarized at the end of this war. The Earl of Cardigan led a failed charge during the Battle of Balaclava in this war, and during this war, Mary Seacole and Florence Nightingale served as nurses. For 10 points, name this war over a namesake peninsula in which Russia was defeated by France, Britain, and the Ottoman Empire.
ANSWER: **Crimean** War

14. One character in this novel notices the phrase “At Yo’ Service” on a statue while speaking to Janey, and that character’s mother is employed at Mr. Sawyer’s restaurant. One character rushes the abolitionist Mr. Bodwin with an icepick at the end of this novel when she mistakes him for schoolteacher. This novel’s protagonist is guided across the Ohio River by Stamp Paid. Denver grows jealous of Paul D after he arrives at 124 Bluestone Road, a house previously inhabited by Baby Suggs and haunted by the ghost of the protagonist’s daughter. For 10 points, name this novel about the former slave Sethe’s infanticide of the title character, written by Toni Morrison.
ANSWER: **Beloved**

15. This quantity appears in the denominator of a differential equation formulated by Verhulst. In the logistic growth model, this quantity is graphically represented by a horizontal asymptote. A population of r-strategists can overshoot this quantity because growth is not dependent on a stable equilibrium phase, but a population of k-strategists tends to grow towards this quantity gradually. The rate of growth of a population is zero when this quantity is reached, at which the birth and death rates are equal. For 10 points, name this biological quantity determined by limiting factors, the maximum population size of a given species that an environment can sustain indefinitely.
ANSWER: **carrying capacity** [prompt on “**K**”]

16. The ceremonial recognition of this agreement took place at the Cabildo Building in Jackson Square. This agreement almost was not approved because of a possible violation of the Treaty of San Ildefonso. One party used the money gained from this agreement to finance a failed invasion of England. In this agreement, François de Barbé-Marbois offered land to Robert Livingston for fifteen million dollars following the Haitian Revolution on behalf of Napoleon, after which Lewis and Clark were sent to explore the land gained through this agreement. For 10 points, name this agreement through which Jefferson doubled the size of the United States by buying a certain territory from France.
ANSWER: **Louisiana Purchase** [or *Vente de la Louisiane*]

17. The speaker of this poem sees a man “through the misty panes” “flound’ring like a man in fire or lime” and drowning “under a green sea.” In this poem, “outstripped Five-Nines dropped behind” men who were “Bent double, like old beggars under sacks.” The speaker of this poem dreams of a man with “white eyes writhing in ... / his hanging face, like a devil’s sick of sin” as “blood / [came] gargling from [his] froth-corrupted lungs.” The speaker of this poem claims that one should not tell “children ardent for some desperate glory” the title “old Lie,” quoted from Horace. For 10 points, name this poem describing a gas attack during World War I, written by Wilfred Owen.
ANSWER: “**Dulce et Decorum est**”

18. Johann Lambert expressed this function as the continued fraction “ x over one minus x -squared over three minus x -squared,” and so on. The hyperbolic type of this function is equal to “ e to the two x minus one over e to the two x plus one.” The parametric equations “ x equals secant of t ” and “ y equals this function of t ” describe an east-west opening hyperbola with semi-major and semi-minor axes of one. The Maclaurin series for this function begins “ x plus x -cubed over three plus two x to the fifth over fifteen,” and this function’s derivative is secant-squared. For 10 points, name this function defined as sine over cosine, or the ratio of opposite to adjacent sides in a right triangle.
ANSWER: **tangent** [accept addition of “of x ” or any other variable]

19. One character in this film tells a computer to “define dancing” after being told to go to sleep. In this film, a character is told about Override Directive A113, given by Shelby Forthright almost seven hundred years before the events of this film. One character goes off his designated path to clean up the “foreign contaminant” left by the title character. The title character finds a plant under a refrigerator door and places it in a boot. After the title character is almost completely replaced with new parts, he reverts back to factory condition until a blue spark from EVE revives him. For 10 points, name this 2008 animated Pixar film about the title robot who brings obese humans back to repopulate Earth.

ANSWER: **WALL-E**

20. In one work, an author from this country imagines a journey to Galta to visit the shrine of the title figure, Hanuman, and that author began a poem with “Willow of crystal, a poplar of water.” Another author from this country wrote a work in which the dying title tycoon listens to recordings of business deals and spurns his wife Catalina. Another author from this country wrote *The Monkey Grammarian* and examined the culture of this country in *The Labyrinth of Solitude*. That author emulated the Aztec calendar to write his poem “Sun Stone.” For 10 points, name this native country of Octavio Paz and the author of *The Death of Artemio Cruz*, Carlos Fuentes.

ANSWER: **Mexico** [or United **Mexican** States; or *Estados Unidos Mexicanos*]

TB. This man appointed Nikita Zotov, a member of his “Jolly Company,” to be overseer of his “Governing Senate.” This man was forced to sign the Treaty of the Pruth, in which he returned the land of Azov to Ahmed III. This man was also forced to return from his Great Embassy to the West following his half-sister Sophia’s attempt to raise a rebellion of the Streltsy. Ivan Mazepa deserted this man during a war in which this ruler defeated troops under Charles XII of Sweden at the Battle of Poltava. For 10 points, name this victor of the Great Northern War and modernizing tsar, who constructed a former capital city of Russia in honor of his namesake saint.

ANSWER: **Peter I** [or **Peter the Great**; or **Pyotr I**; or **Pyotr Velikiy**; prompt on “**Peter**” or “**Pyotr** Alexeyevich Romanov”]

FINALS Packet 1: Bonuses

1. [NOTE TO MODERATOR: do not reveal the alternate answerline to the first part unless necessary]

A League of Humanity representative approaches Domin's factory in this work, and Alquist realizes that two entities named Primus and Helena are the new Adam and Eve. For 10 points each:

[10] Name this 1920 science fiction play by Karel Čapek.

ANSWER: **R.U.R.** [or **Rossum's Universal Robots**]

[10] *R.U.R.* coined this term, which is defined as a machine that resembles a human being and performs automated tasks.

ANSWER: "**robots**" [do not prompt on or accept any other word]

[10] Karel Čapek wrote in this language, which was also used by the author of *The Unbearable Lightness of Being*, Milan Kundera.

ANSWER: **Czech** [or **čeština**; or **český jazyk**; prompt on "**Bohemian**"]

2. In 2011, Canada's Liberal Party faced its largest defeat in a generation, slipping to the third party in the House of Commons. For 10 points each:

[10] Name the party that replaced the Liberals as the Official Opposition of Canada, a social democratic group now led by Thomas Mulcair after the death of Jack Layton.

ANSWER: **New Democratic Party** [or **NDP**; or **Nouveau Parti démocratique**; or **NPD**]

[10] This current Conservative prime minister of Canada won the 2011 election.

ANSWER: Stephen Joseph **Harper**

[10] The current Liberal Party leader is the son of this former Canadian prime minister, who issued the War Measures Act in response to kidnappings by the Quebec separatist group FLQ during the October Crisis.

ANSWER: Joseph Philippe **Pierre Yves Elliott Trudeau** [prompt on "**Trudeau**"]

3. Name the following about the Jacobite uprising, for 10 points each.

[10] This 1746 battle saw the final defeat of Jacobite forces. Bonnie Prince Charlie's Scottish Highlanders clashed with the Duke of Cumberland's British and Hessian troops near Inverness in this battle.

ANSWER: Battle of **Culloden Moor** [or **Blàr Chùil Lodair**]

[10] Bonnie Prince Charlie belonged to this dynastic family attempting to regain control of the English throne after it was taken by the House of Hanover. Queen Anne was the last sovereign of this house.

ANSWER: House of **Stuart**

[10] The Jacobites initially looked to restore this monarch, deposed by William of Orange in the Glorious Revolution. The group took their name from the Latin form of this monarch's name.

ANSWER: **James II** of England and Ireland [or **James VII** of Scotland, or **James II** and VII, or **James VII** and **II**; prompt on "**James**"]

4. An American soldier in this novel tells the narrator to trample his pregnant girlfriend in exchange for two cigarette cartons. For 10 points each:

[10] Name this novel about the stuttering acolyte Mizoguchi, who befriends Tsurukawa and the clubfooted Kashiwagi. It concludes with Mizoguchi's burning of the title structure.

ANSWER: *The **Temple of the Golden Pavilion*** [or **Kinkaku-ji**]

[10] This author of *The Temple of the Golden Pavilion* wrote *Confessions of a Mask* and *The Sea of Fertility* tetralogy. After failing to start a coup among soldiers of the Ichigaya military base, this man committed *seppuku* in 1970.

ANSWER: Yukio **Mishima** [or **Mishima** Yukio; or Kimitake **Hiraoka**; or **Hiraoka** Kimitake]

[10] Yukio Mishima hailed from this Asian country, home to other authors such as Kenzaburo Oe and Yasunari Kawabata.

ANSWER: **Japan** [or **Nippon-koku**; or **Nihon-koku**]

5. Political boundaries have been shifted frequently in the United States. For 10 points each:

[10] The number of representatives from each state is decided after each instance of this process, which includes finding the population of each state and is required by the Constitution to occur every ten years.

ANSWER: United States **Census**

[10] This is a process of drawing boundaries to create districts favorable towards certain political parties. It received its name when a governor of Massachusetts formed a political district around Boston that looked like a salamander.

ANSWER: **gerrymandering**

[10] This was a controversial practice in which social and economic services are denied to groups, especially minorities, clustered in specific areas. Cities like Detroit were victims of this practice.

ANSWER: **redlining** [accept word forms]

6. This artist dubbed his female alter ego Rose Sélavy. For 10 points each:

[10] Name this French-American artist of the Dada movement who sketched a mustache on a reproduction of the Mona Lisa in his *L.H.O.O.Q.* and created *The Bride Stripped Bare by Her Bachelors, Even*.

ANSWER: Marcel **Duchamp**

[10] This term describes the art Duchamp created from everyday manufactured objects. Examples of these objects include a shovel titled *In advance of the broken arm* and an upturned porcelain urinal, his *Fountain*.

ANSWER: **ready-mades**

[10] Labeled by one critic “an explosion in a shingle factory,” this brown and black painting by Duchamp uses a series of jagged shapes to depict the title figure’s movement.

ANSWER: ***Nude Descending a Staircase, No. 2*** [or ***Nu descendant un escalier n°2***]

7. Even when we’re not talking about Nietzsche, gods can die. For 10 points each:

[10] Set first drowned this god, then cut him up into many pieces when Isis brought him back to life the first time. After his death, he became the god of the Egyptian Underworld.

ANSWER: **Osiris** [or **Usiris**; or **Asari**; or **Aser**; or **Ausir**; or **Wesir**; or **Usire**; or **Ausare**]

[10] The Aesir were not able to bring back this god after his death because the giantess Thökk refused to weep for him. This god was killed because Frigg failed to make mistletoe promise not to harm this god.

ANSWER: **Baldr** [or **Balder**; or **Baldur**]

[10] This god set himself on fire after becoming drunk and committing incest with his sister. He then became the morning star and swore to return to his people.

ANSWER: **Quetzalcoatl** [accept **Kukulkan**; or **Qucumatz**; or **Gukumatz**; or **Gugumatz**; prompt on the “**feathered serpent**”; prompt on “**Tlahuizcalpantecuhtli**”]

8. Answer these questions about the Italian unification movement, for 10 points each.

[10] This Italian general led the Expedition of the Thousand to invade the Kingdom of the Two Sicilies. His leadership of the *Risorgimento* led to a short-lived dictatorship in 1860.

ANSWER: Giuseppe **Garibaldi**

[10] This longest-reigning Pope became the “Prisoner of the Vatican” during the *Risorgimento*. Due to the invasion of Rome, this Pope suspended the First Vatican Council, which he had called the previous year.

ANSWER: **Pius IX** [or Giovanni Maria **Mastai-Ferretti** or **Pio Nono**; prompt on partial answer]

[10] This “Beating Heart of Italy” was a Triumvir of the short-lived Republic of Rome. This founder of “Young Italy” claimed that “God and the people” would bring victory to the *Risorgimento*.

ANSWER: Giuseppe **Mazzini**

9. The theme of this work was based on a theme from incidental music to *Abdelazer*. For 10 points each:

[10] Name this work whose theme is played by the woodwinds, brass, strings, and finally percussion, progressing through thirteen variations to feature each section of the orchestra, followed by a fugue that involves the entire orchestra.

ANSWER: *The **Young Person’s Guide to the Orchestra***

[10] *The Young Person’s Guide to the Orchestra* was composed by this British composer, who also composed an opera about the fisherman *Peter Grimes* and included poems by Wilfred Owen in his *War Requiem*.

ANSWER: Edward Benjamin **Britten**, Baron Britten

[10] This Baroque English composer wrote the incidental music to *Abdelazer*, from which Britten took the theme for *The Young Person’s Guide to the Orchestra*. He composed the operas *Dido and Aeneas* and *The Fairy Queen*.

ANSWER: Henry **Purcell**

10. Name some Biblical monarchs, for 10 points each.

[10] This king of Babylon defeated King Zedekiah of Judah and enslaved the Jews, sending them to Babylon. His dream was interpreted by Daniel, and he threw Shadrach, Meshach, and Abednego into the Furnace.

ANSWER: **Nebuchadnezzar II** [or **Naboukhodonósôr**; or **Nibūhadnišsar**]

[10] This Persian king conquered Babylon and liberated the Jews from captivity in Babylon. He later allowed them to return home and rebuild the Temple of Jerusalem.

ANSWER: **Cyrus II** [or **Cyrus the Great**, or **Cyrus the Elder**; or **Koresh**]

[10] This king of Judah took the throne at the age of eight and returned the Ark of the Covenant to the Temple. He later found a scroll of the book of Deuteronomy in the Temple and ordered it to be read aloud to his subjects.

ANSWER: **Josiah** [or **Yoshiyahu**]

11. The Mediterranean type of these is characterized by mild, wet winters and warm, dry summers. For 10 points each:

[10] Name this measure of the average weather patterns that affect a particular area.

ANSWER: **climates** [or **climes**]

[10] This biome develops immediately north of boreal climates and features limited vegetation consisting of grasses, dwarf shrubs, and lichen. The subsoil of this biome is known as permafrost.

ANSWER: **tundra**

[10] This system of climate classification, devised by a Russian-German climatologist, is based on native vegetation populations and makes use of terms such as “boreal.” Rudolf Geiger later added to this system.

ANSWER: **Köppen** climate classification [or **Köppen-Geiger** climate classification]

12. The first of these acts were the Northwest Ordinances, and the National Park Service was created with one of these. For 10 points each:

[10] Name this type of act that is passed every time the United States officially establishes a territory or creates an agency to manage federal lands.

ANSWER: **Organic Acts**

[10] The Organic Act for the Territory of New Mexico was part of this larger agreement, proposed by Henry Clay, which admitted California into the Union as a free state and instituted a stricter Fugitive Slave Act.

ANSWER: **Compromise of 1850** [do not prompt on or accept “Missouri Compromise” or “Great Compromise”]

[10] The Foraker Act established a civilian government on this island acquired by the US during the Spanish-American War. The Jones–Shafroth Act later granted U.S. citizenship to people in this territory.

ANSWER: Commonwealth of **Puerto Rico** [or *Estado Libre Asociado de **Puerto Rico***]

13. This movie begins with footage taken from a plane as it flies over a sea of clouds and later descends into the city of Nuremberg. For 10 points each:

[10] Name this World War II-era film directed by Leni Riefenstahl that stars Adolf Hitler and records the events of a four-day political rally in the German city of Nuremberg.

ANSWER: **Triumph of the Will** [or **Triumph des Willens**]

[10] *Triumph of the Will* served as propaganda for this fascist German political party, at that time led by Hitler.

ANSWER: **Nazi** Party [accept equivalents; or **National Socialist** German Workers’ Party; or **Nationalsozialistische Deutsche Arbeiterpartei**; or **Nationalsozialisten**; or **NSDAP**; do not accept or prompt on “Socialist Democratic Party of Germany” or “*Sozialdemokratische Partei Deutschlands*” or “SPD” or “Sozis”]

[10] This American directed a series of anti-fascist documentaries titled *Why We Fight*, which was a direct response to *Triumph of the Will*. This man also directed the films *It Happened One Night* and *It’s a Wonderful Life*.

ANSWER: Frank Russell **Capra**

14. Cubic unit cells in these structures can be face-centered or body-centered. For 10 points each:

[10] Name these solid materials consisting of subunits arranged in a three-dimensional ordered lattice.

ANSWER: **crystals**

[10] This phenomenon occurs when waves bend as they encounter an obstacle or pass through an opening. A namesake grating device makes use of this phenomenon in light to produce spectra.

ANSWER: **diffraction** [accept word forms]

[10] This law gives the angles for diffraction of light through a crystal lattice. It states that an integer times the wavelength equals two times the distance between the lattice planes times the sine of the incident beam angle.

ANSWER: **Bragg's law**

15. In this novel, Sophia falls in love with the eccentric Mr. Burchell after he saves her from drowning. For 10 points each:

[10] Name this novel in which Squire Thornhill seduces Dr. Charles Primrose's daughter, Olivia. Mr. Burchell later reveals his true identity as Squire Thornhill's uncle and remedies the damages inflicted on the Primrose family.

ANSWER: *The **Vicar of Wakefield***

[10] *The Vicar of Wakefield* was written by this Irish author who described a village named Auburn in his poem *The Deserted Village*.

ANSWER: Oliver **Goldsmith**

[10] Goldsmith also wrote this play in which Kate Hardcastle pretends to be a maid in order to woo Charles Marlow, and Tony Lumpkin steals jewels so that Constance Neville and George Hastings can be engaged.

ANSWER: ***She Stoops to Conquer***

16. This term was first used to describe the fictional Republic of Anchuria in *Cabbages and Kings*. For 10 points each:

[10] Name this political science term coined by O. Henry to describe a politically unstable country whose economy is based solely on exports of a single product.

ANSWER: **banana republic**

[10] In this Central American banana republic north of Nicaragua, Lee Christmas, Manuel Bonilla, and "banana man" Sam Zemurray plotted the overthrow of President Miguel Dávila. Its capital is Tegucigalpa.

ANSWER: Republic of **Honduras** [or Spanish **Honduras**, or *República de Honduras*]

[10] In order to protect its trade monopoly, this company convinced the United States that Árbenz Guzmán was running a Soviet puppet state in Guatemala, prompting the CIA to support the 1954 overthrow of Guzmán.

ANSWER: **United Fruit** Company [prompt on "**United Brands** Company" or "**Chiquita** Brands International"]

17. Name some pre-Socratic philosophers, for 10 points each.

[10] This man founded a religious cult centered around numbers. His followers threw Hippasus overboard after he discovered irrational numbers through this man's namesake theorem, which involves right triangles.

ANSWER: **Pythagoras** of Samos [or *Pythagóras ho Sámios*; accept **Pythagorean** theorem]

[10] This man's namesake paradoxes state that a moving object can never reach its destination, because it must first travel halfway there, but before it can reach that, it must travel halfway to the halfway mark, and so on.

ANSWER: **Zeno** of Elea [or *Zinon ho Eleátis*]

[10] This philosopher argued against Zeno, stating that a void must exist because movement is possible. He is also considered the "father of modern science" because of his theory regarding the existence of the atom.

ANSWER: **Democritus** [or *Dēmókritos*]

18. This reagent is produced from two molecules of phenol and one of phthalic anhydride. For 10 points each:
 [10] Name this acid-base indicator that is usually colorless in acidic solutions but turns pink when placed in basic solutions.

ANSWER: **phenolphthalein** [or **HIn**; or **phph**]

[10] Methanol is carbonylated in the Cativa Process to produce this compound, which has the chemical formula CH_3COOH . Vinegar consists mainly of this substance and water.

ANSWER: **acetic** acid [or **ethanoic** acid; or **methanecarboxylic** acid]

[10] This molecule is often used as a chelating agent, because it is hexadentate and possesses two nitrogen and four oxygen atoms capable of forming dative bonds with metal ions in solution.

ANSWER: **EDTA** [or **ethylenediaminetetraacetic** acid]

19. One character in this work remembers how her suitor Edgar Atkins Teagarden brought her a watermelon, only for a child to later eat it by mistake. For 10 points each:

[10] Name this short story in which the grandmother accompanies Bailey and her grandchildren on a vacation. The cat Pitty Sing causes a car accident, which leads to the family's death at the hands of Bobby Lee, Hiram, and the Misfit.

ANSWER: "A **Good Man Is Hard to Find**"

[10] This Southern Gothic author of "A Good Man Is Hard to Find" wrote of the Bible salesman Manley Pointer stealing Hulga Hopewell's wooden leg in "Good Country People."

ANSWER: Mary Flannery **O'Connor**

[10] In this other O'Connor short story, Julian's prejudiced mother gives the black child Carver a penny while riding the city bus. In disgust, Carver's mother strikes Julian's mother with her pocketbook.

ANSWER: "**Everything That Rises Must Converge**"

20. This process utilizes *Taq* polymerase and comes in "touchdown" and "RT-" varieties. For 10 points each:

[10] Name this laboratory technique that depends on thermal cycling to amplify certain segments of DNA.

ANSWER: **polymerase chain reaction** [or **PCR**]

[10] PCR "master mix" contains the ionic form of this element, which stabilizes the negative phosphate groups in DNA. This alkaline earth metal's plus-two ion is also found coordinated to the porphyrin ring in chlorophyll.

ANSWER: **magnesium** $2+$ [or **Mg⁺⁺**; or **Mg⁺²**; accept forms that switch the order of "plus" and "two"]

[10] This lab technique creates a charge gradient to separate charged macromolecules using the namesake medium. The larger the macromolecule, the slower it will travel during this process, which separates particles based on length.

ANSWER: agarose gel **electrophoresis** [or sodium dodecyl sulfate polyacrylamide gel **electrophoresis**; or SDS-**PAGE**; or starch gel **electrophoresis**]