

**BHSAT XX (2011): This One Doesn't Bilow, We Promise!**  
**Written by Y. Student Academic Competitions**

**Round 11 Tossups**

1. This group has toured and collaborated with an artist who used to perform under the name Final Fantasy, but now simply uses his name, Owen Pallett. In one song by this band, the singer tells of how they told her to “quit these pretentious things and just punch the clock” In an earlier song by this Canadian band, another singer chants “every time you close your eyes / lies, lies.” That song, *Rebellion*, comes from an album Pitchfork rated the second best of the decade; another song from Funeral, *Wake Up*, was used in the trailer for *Where the Wild Things Are*. For 10 points, name this indie rock band from Montreal, Canada, whose third album *The Suburbs* won this year's Grammy for best album.

ANSWER: **Arcade Fire**

2. Edwin James completed the first recorded ascent of this mountain. The Fifty-Niners flocked to this mountain in search of gold. There is an annual car race to the top of this mountain. This mountain was renamed from “El Capitan.” Katharine Lee Bates wrote a song after ascending this mountain. That song is “America the Beautiful.” For 10 points, identify this mountain in the Front Range of the Rocky Mountains, located next to Colorado Springs, and named after the first American explorer who encountered it.

ANSWER: **Pike's Peak**

3. The protagonist of one of this author's novels undergoes an identity crisis after his wife claims his nose tilts to the right, while the title character of another of his novels starts a new life after the corpse of a man who committed suicide is mistaken for his own. This author of *One, No One, and One Hundred Thousand* and *The Late Mattia Pascal* is more famous for plays, including one in which a horse accident causes the protagonist to think he's the titular Holy Roman Emperor, and one in which The Father, The Stepdaughter, and others demand that the Manager help them tell their story. For 10 points, name this author of *Enrico IV* and *Six Characters in Search of an Author*.

ANSWER: Luigi **Pirandello**

4. The Celtic god of this was Mannanan Mac Lir; one deity of it had his bride choose him out of all the gods from only his feet, thus marrying Skadi. Another from the same pantheon married Ran, fathered nine billow-maidens, and hosts elaborate parties for the Aesir. Besides Njord and Aegir, the most famous deity of this type turned several Phaeacians in Alcinous's sight to stone, helped Apollo build the the walls of Troy, lost a contest judged by Cecrops to patronize a city when his rival produced an olive tree, and made horses. For 10 points, name this role played by the earthquake-causing, trident-wielding Poseidon.

ANSWER: **God** of the **Sea** (accept clear knowledge equivalents, but do not accept things like River Gods)

5. According to VSEPR [“*vesper*”] theory, this is the steric number of square pyramidal and square planar compounds. The products from a diene and a dienophile in the Diels-Alder reaction have this many members, as do the “chair” and “boat” configurations. One metallic carcinogen is chromium with this oxidation state. One exception to the octet rule, boron, is most stable with this many shared electrons, which is also the number of electrons in a full set of p-orbitals. For 10 points, give this number, the number of carbons in benzene and cyclohexane and the atomic number of carbon.

ANSWER: **six** [accept **6**]

6. Two women sit on a bench fixing the title objects in this painter's *Mending the Nets* and ravens swoop towards the title animal running through the snow in his *The Fox Hunt*. The capture of Confederate soldiers at the Battle of Petersburg is the subject of his *Prisoners from the Front*. A red brick house stands behind children running with their hands linked, playing the title game, in his *Snap-the-Whip*. Sharks swim beneath a boat containing a solitary African-American man in his *The Gulf Stream*. For 10 points, name this American painter of many seascapes of his home-state of Maine.

ANSWER: Winslow **Homer**

7. One of this man's discusses his psychological theories that individuals act to win the approval of the "impartial spectator," and included sections entitled "On the Propriety of Action" and "Of Sympathy". That work would act as a philosophical foundation to his other works, including *A Treatise on Public Opulence* and his *Lectures on Jurisprudence*. In addition to his *Theory of Moral Sentiments*, his best known work opens with an analysis of a pin factory to demonstrate the advantages of division of labor. For 10 points, name this Scottish economist who postulated the invisible hand, best known for his *The Wealth of Nations*.

ANSWER: Adam Smith

8. This body's members are depicted running around collapsing Greek columns hit by lightning bolts, or as leftward-facing heads, one of which has a top hat, on a hydra-like monster threatened by a sword in two political cartoons. John Marshall's ruling forbade states from taxing this body in *McCulloch v. Maryland*. It was chaired in Philadelphia by Nicholas Biddle, and founded in 1816. For 10 points, name this quasi-independent body whose charter renewal was vetoed by Andrew Jackson, which succeeded a similar body advocated by Hamilton and, like today's Federal Reserve, held government money.

ANSWER: Second Bank of the United States [prompt "Second National Bank" or "B.U.S.;" do not accept answers indicating the "First" Bank]

9. The central characters of this novel form the Pickwick Club, based on one character's reading of the *Pickwick Papers*. While living in Mrs. Kirke's parlor, one character meets and eventually marries the German professor Fritz Bhaer, after turning down a proposal from Theodore "Laurie" Lawrence, who then marries her sister Amy. Set in nineteenth century New England and depicting the lives of the four titular sisters, this is, for 10 points, what novel about Meg, Jo, Beth, and Amy March by Louisa May Alcott.

ANSWER: Little Women

10. Udden and Wentworth's research on this type of substance yielded their namesake grain size scale, which gives the scientific definitions of terms like "silt" and "clay." Biochemical examples of this type can include aragonite or calcite. The majority of clastic rocks are of this rock type, and most of these are clastic. Subtypes of this with large grains include conglomerates, and it is found in layers by age known as strata. Examples of this rock type, produced by compaction of particulate matter, include chalk, limestone, sandstone, and shale. For 10 points, identify this type of rock which is distinct from metamorphic and igneous.

ANSWER: sedimentary rocks [prompt "sediment" until "clastic" is read; prompt "rock" throughout; why not?]

11. *Jeopardy!* recently filmed three episodes in a building designed by this man for IBM, the Thomas J. Watson Research Center. At one university, he designed Ezra Stiles College, Morse College, and Ingalls Rink, the so-called "Yale Whale". This man's designs for airports include the TWA Flight Center at JFK and the main terminal of Dulles International. His most famous piece of furniture design was popularized by its use on *Star Trek*, the Tulip Chair, but his most famous work is a one-hundred-ninety-two-foot tall inverted catenary curve in St. Louis, the Gateway Arch. For 10 points, name this son of Eliel, a Finnish-American architect.

ANSWER: Eero Saarin

12. One metaphor in this religion treats its laws as 'choice wine' to be savored; those laws include payment of a fine to the Local Spiritual Assembly for fornication and the facing of the Qiblih in once-a-day prayer. In 1957, its Guardian Shoghi Effendi died. Mandating a yearly fast of 19 days' length, this priestless religion's holy scriptures include the Book of Aqdas and the Book of Certitude, and practitioners of this faith with a Universal House of Justice in Haifa, Israel, tolerate all faiths as paths towards God. Symbolized by a nine-pointed star, for 10 points, name this monotheistic religion founded in 19th century by the Bab and Baha'ullah.

ANSWER: Ba'ha'i Faith

13. In this town, a monarch pledged to retain his chief advisor during the Day of the Dupes. One ceremony here was attended in June by Vittorio Orlando, who had left the nearby "Big Four" the preceding March. The unification ceremony for Germany occurred here, and a bread shortage led women to march to it on October 5, 1789. Charles Lebrun worked on a former hunting lodge's expansion in this town, creating its Hall of Mirrors. For 10 points, name this suburb whose royal palace was built for Louis XIV ten miles southwest of Paris, the namesake of a treaty ending World War I.

ANSWER: Versailles [do not prompt "Paris" at any point, though the Paris Peace Conference preceded the Treaty of Versailles]

14. In one of his short stories, a Nottinghamshire coal-miner's wife waits for her alcoholic husband to return only to discover that he has died in a pit accident. In another one of his stories, Paul and his Uncle Oscar win eighty thousand pounds after Paul discovers the ability to predict the winners of races by riding the title toy. Besides *The Odour of Chrysanthemums* and *The Rocking-Horse Winner*, he is more famous for a novel in which Paul Morel euthanizes Gertrude, and one about Constance's affair with Oliver Mellors. For 10 points, this is what English novelist of *Sons and Lovers* and *Lady Chatterley's Lover*?

ANSWER: D.H. Lawrence

15. If  $J$  is greater than 0 in the energy function  $-J \sum_i S_i S_{i+1}$ , these materials follow a model solved by Lars Onsager; those  $S$  terms signify spins. They cause a crackling noise when placed near loudspeakers in an effect named for Barkhausen. They are made up of similarly-aligned domains which grow smaller with temperature, losing their namesake property above the Curie point; those domains of dipole moments remain aligned even if the external field is removed. For 10 points, name these strongest and most commonly used metals whose north and south poles attract, exemplified by cobalt, nickel, and iron.

ANSWER: ferromagnets [accept ferromagnetism; accept Ising model until “these materials” is read]

16. The composer of this piece indicated that its last bar “should be repeated until the sound is lost in the distance,” and that bar consists of two chords sung by an offstage women’s chorus used only in the final movement. This piece’s composer adapted one melody from its fourth movement into a patriotic song with text by Cecil Spring-Rice, “I Vow to Thee, My Country.” The first movement of this piece uses an ostinato in 5/4 time and is titled after the “Bringer of War,” while another movement depicts the “Bringer of Jollity.” For 10 points, name this orchestral suite containing movements named after Mars and Jupiter, composed by Gustav Holst.

ANSWER: *The* Planets, op. 32

17. Nazi philosopher Carl Schmitt discussed the “Crisis” of this phenomenon, claiming that liberalism was incompatible with its “parliamentary” type. Another thinker claimed one example of it was full of culturally dull men with no appreciation for art, and advocated tempering its instincts with religion. Aristotle considered it a perversion of “polity,” and it is third in a classical trio with oligarchy and monarchy. Written about with *Education* by Dewey, for 10 points, name this type of governance observed by an author who feared “tyranny of the majority”, Alexis de Tocqueville, in *America*.

ANSWER: democracy [accept parliamentary democracy until “parliamentary” is read]

18. This winner of the Battle of Carcano exiled his cousin Henry the Lion, who this man had previously made a duke, and tried and hanged the monk Arnold of Brescia. The Italian Ghibellines first fought the Guelphs in support of this holder of the duchy of Swabia, who conquered the Sultanate of Rum and earlier lost at Legnano to the Lombard League in Italy. This successor to Conrad III Hohenstaufen allied with Pope Adrian IV, and failed to remove his armor before drowning in a river in 1191. For 10 points, name this Holy Roman Emperor and initial commander of the Third Crusade, nicknamed for his facial hair.

ANSWER: Frederick Barbarossa [or Frederick I Hohenstaufen; accept Friedrich or Federico for Frederick]

19. The title character of one of this author’s novels has a friendly meeting with George III after being captured by the British Navy, and is made a spy by Benjamin Franklin. The title character of another of this author’s novels kills Glen Stanley and is in love with his half sister, Isabel Banford. In addition to writing *Israel Potter* and *Pierre: or, the Ambiguities*, he created a title character who serves aboard the *Bellipotent*, and is hanged for accidentally killing John Claggart. His most famous novel features such characters as Tashtego, Queequeg and Starbuck, and opens with the line “Call me Ishmael”. For 10 points, name this American author of *Billy Budd* and *Moby Dick*.

ANSWER: Herman Melville

20. One device measuring this structure’s function uses twelve “leads” to output QRS complexes on 1-millimeter graph paper. This structure’s tissue contains intercalated discs, and majority-collagen structures called chordae tendineae connect its tricuspid valve and papillary muscles. The Bundle of His and sinoatrial node send electrical signals to its Purkinje fibers. This organ has a mitral valve, and its dividers, or septa, separate the atria and ventricles, resulting in four chambers. For 10 points, name this organ below the aorta, which contracts in order to pump blood.

ANSWER: heart

TB. This ruler signed the treaty of Amasia after a campaign against Tahmasp's Safavid empire; he died outside Szigeth Fortress forty years after allying with John Zapolya, and issuing laws called Kanuns. This husband of Roxelana hired the architect Sinan, expelled the Knights Hospitalers from Rhodes, and had his former advisor Ibrahim Pasha killed; he led a successful siege of Belgrade and defeated Louis II at Mohacs in Hungary before failing to besiege Vienna in 1529. For 10 points, name this son of Selim the Grim, an Ottoman sultan known as "the Magnificent."

ANSWER: **Suleiman** I [accept **Suleiman the Magnificent** or **Suleiman the Lawgiver** or **Kanuni Sultan Suleyman**]

## Round 11 Bonuses

1. For 10 points each, answer these questions about three-nucleotide sequences of mRNA called codons.

[10] The order of codons determines the order in which these molecules build up to become a protein. In animals, methionine is always the first of these in a protein's primary structure.

ANSWER: **amino acids**

[10] Symbolized W, this amino acid with codon UGG has an indole R-group. Unwarranted popular beliefs claim that its prevalence in turkey leads to Thanksgiving drowsiness.

ANSWER: **tryptophan**

[10] The mRNA sequences UAG, UAA, and UGA, sometimes called amber, ochre, and opal respectively, have this function in the genetic code.

ANSWER: **stop** codons [accept "they **terminate translation**" or other close equivalents]

2. Capaneus was struck by lightning while scaling the walls of this city along with the forces of Polynices and the father of Diomedes, Tydeus. For 10 points each,

[10] Name this ancient Greek city, whose king Pentheus was killed by maenads for refusing to worship Dionysus, and which was the home of the blind prophet Tiresias. Other rulers of it included Laius, Jocasta, and their progeny.

ANSWER: **Thebes**

[10] This son of Agenor founded Thebes after searching for his sister Europa. He sowed dragon's teeth into the earth and built the city with the help of the men who sprang up from the ground. He also brought the alphabet to Greece.

ANSWER: **Cadmus**

[10] Cadmus married Harmonia, to whom Hephaestus gave a cursed one of these objects. Another example, recovered after Heimdall pimp-smacked its thief Loki in the form of a seal, was Freya's Brisingamen.

ANSWER: **necklace**

3. Answer some questions about Ethiopia, for 10 points each:

[10] This European power failed to colonize Ethiopia after losing the Battle of Adowa in 1896. They returned to briefly conquer Ethiopia during the Fascist era.

ANSWER: Kingdom of **Italy** [accept Regno d'**Italia**]

[10] This Ethiopian emperor presided over the victory at Adowa.

ANSWER: **Menelik II**

[10] Deposed by a coup led by Mengistu called the Derg, this Ethiopian emperor from 1930 to 1974 resisted the occupation by Mussolini's Italy and is regarded by Rastafarians as divine.

ANSWER: **Haile Selassie** [accept **Selassie I**; prompt "Selassie" by itself]

4. Set in Yoknapatawpha County, Mississippi, this work uses stream of consciousness to chronicle the Compson family. For 10 points each:

[10] Benjy, Quentin, and Jason each narrate sections of what novel?

ANSWER: *The **Sound and the Fury***

[10] This author of *The Sound and the Fury* continued the saga of the Compsons in such books as *Absalom, Absalom*, and wrote of the Bundren family's attempt to bury their matriarch in *As I Lay Dying*.

ANSWER: William **Faulkner**

[10] Characters in this Faulkner novel include Lena Grove, a pregnant woman trying to find the father of her unborn child, and Joe Christmas, a mixed-race man blamed for the murder of his former lover Joanna Burden.

ANSWER: **Light in August**

5. His paintings of shady characters include *The Woman with Gambling Mania* and *Portrait of a Kleptomaniac*. For 10 points each:

[10] Name this French romantic painter, who depicted the title cavalryman on a rearing horse in his *The Charging Chasseur* and whose most famous painting depicts an event that took place off the coast of Mauritania.

ANSWER: Théodore **Géricault**

[10] Géricault is best known for this 1819 painting of the survivors of the title shipwreck.

ANSWER: *The **Raft of the Medusa*** [or *Le Radeau de la Méduse*]

[10] This other 19th century French painter was one of the founders of the Barbizon school, and is known for depiction of peasant farmer scenes like *The Angelus* and *The Gleaners*.

ANSWER: Jean-François **Millet**

6. You have 5 seconds to solve each of these long-standing, difficult math problems. ...Just kidding! Answer these questions *about* long-standing, difficult math problems, for 10 points each.

[10] A computer was used to help prove a theorem claiming any planar map can be divided into contiguous regions and colored with *this* many colors without any region bordering another of the same color.

ANSWER: **four** [accept **four-color** [map] theorem]

[10] In 2010, Gregory Perelman won the prize for solving this topology conjecture named after a Frenchman.

Generally speaking it says that every simply connected 3-manifold can be easily reshaped into a 3-sphere.

ANSWER: **Poincaré** Conjecture

[10] The Poincaré conjecture was among the Millennium problems announced in 2000 as a ripoff of this mathematician's list of 23 unsolved problems as of 1900, on which basically every 20th century mathematician or physicist worked.

ANSWER: David **Hilbert**

7. Often invoked before major undertakings, he is known as the "remover of obstacles," for 10 points each:

[10] Name this Hindu God, whose father Shiva notably chopped off his head and replaced it with an elephant's.

ANSWER: **Ganesh**

[10] An oversized example of this type of animal, which also wages war with frogs in a Greek mock epic called the *Batrachomyomachia* attributed to Homer, is Ganesh's mount.

ANSWER: **mouse**

[10] Ganesh once won a race against this sibling of his by sitting at home or by circling his father, who means the world to him. The prize was a divine mango of knowledge.

ANSWER: **Kartikeya** [accept **Skanda**, **Murugan**, or **Subrahmanya**]

8. For 10 points each, name these emperors of Persia:

[10] This Persian king invaded Greece, beating the 300 at the battle of Thermopylae. His ships lost at Salamis.

ANSWER: **Xerxes I** or **Xerxes the Great**

[10] In the sixth century BC, this Achaemenid great-grandfather of Xerxes conquered the Medes, the Lydians, and the Jew-captivating Babylonians to expand Persia.

ANSWER: **Cyrus the Great** [accept **Cyrus II**]

[10] Cyrus was succeeded by this crazy son, who unsuccessfully invaded Egypt. According to historians such as Herodotus, this man's successor posed as a dead brother of his named Smerdis or Bardiya.

ANSWER: **Cambyses II**

9. Identify some South African novels, for 10 points each.

[10] Stephen Kumalo discovers that his sister Gertrude has become a prostitute and his son has murdered Arthur Jarvis in this novel by Alan Paton.

ANSWER: **Cry, the Beloved Country**

[10] Maureen and Bamford Smales are aided by the title servant in fleeing Johannesburg in this novel by Nadine Gordimer.

ANSWER: **July's People**

[10] Professor David Lurie is fired for having an affair with his student Melanie and goes to live with his daughter Lucy in this novel by J.M. Coetzee.

ANSWER: **Disgrace**

10. This experiment was criticized for manipulating young children and inducing feelings of frustration, but its results would nonetheless have a profound impact on social media theory, for 10 points each:

[10] Name this experiment in which children observed an adult either acting aggressively or non-aggressively towards the namesake toy, and then their interactions with the toy were observed.

ANSWER: **Bobo Doll** Experiment

[10] The Bobo Doll Experiment was conducted by Bandura at this institution, notable for a later study on the effects of role-playing and authority in a mock prison run by Phillip Zimbardo

ANSWER: **Stanford** University

[10] This psychologist studied the effects of isolation at Madison-Wisconsin, but may be more notable for his experiments with monkeys given terry-cloth and wire models of mothers for support.

ANSWER: Harry **Harlow**

11. Late in this opera, Colline pawns his overcoat, which he sings about in “Vecchia zimarra.” For 10 points each:  
[10] Name this Italian opera about young artists in Paris and the love between Rodolfo and Mimi.

ANSWER: **La bohème**

[10] This Italian composed *La bohème*, as well as the operas *Madama Butterfly*, *Tosca*, and the unfinished *Turandot*.

ANSWER: Giacomo **Puccini**

[10] Puccini’s opera *Manon Lescaut* is based on a novel by Abbé Prévost that also served as this basis for this Frenchman’s opera *Manon*. He also wrote *Thaïs* and *Werther*.

ANSWER: Jules **Massenet**

12. Answer these questions about Mexican states for 10 points each:

[10] This is the northwestern Mexican state with its capital at Mexicali. It’s home to the border city of Tijuana.

ANSWER: **Baja California** Norte [do not accept “Baja California Sur”]

[10] This state along the southwestern coast is the center of Mexico’s tequila industry, and is home to the town of Tequila as well as noted large city Guadalajara.

ANSWER: **Jalisco**

[10] The 1994 Zapatista rebellion began among the indigenous in this southernmost Mexican state.

ANSWER: **Chiapas**

13. Answer some questions about the behavior of gases, for 10 points each:

[10] Charles’ Law posits a direct proportion between temperature and this quantity for a gas, while Boyle’s law claims it is inversely related to a gas’s pressure. It’s measured in liters.

ANSWER: **volume** of a gas

[10] Charles’ and Boyle’s laws combine in this law which relates the pressure, volume, temperature, and amount of a sample to its namesake constant. It’s often symbolized  $PV = nRT$ .

ANSWER: **ideal gas law**

[10] The van der Waals equation, a correction of the ideal gas law, is this type of equation which compares functions whose variable values arise independent of path.

ANSWER: **equation of state**

14. Answer some questions about serial violators of African-American civil rights, for 10 points each.

[10] Suppressed by Benjamin Butler’s Force Act, this white-hooded terrorist group was founded in 1865 in Pulaski, Tennessee by Nathan Bedford Forrest.

ANSWER: The Ku Klux **Klan**

[10] This D.W. Griffith silent film about the Reconstruction-era Klan featured a cross-burning scene and inspired people to found a second Klan in 1915. Oops.

ANSWER: **Birth of a Nation**

[10] A re-reincarnated Klan was responsible for the FBI-investigated murder of civil rights activists James Chaney, Andrew Goodman, and Michael Schwerner in this state in 1964.

ANSWER: **Mississippi** [Those murders are the subject of the film “Mississippi Burning.”]

15. How did your March Madness bracket go? Name these teams that reached the Sweet Sixteen of the 2011 Division I NCAA basketball tournament, for 10 points each:

[10] Led by standout guard Jimmer Fredette, Jackson Emery, and Noah Hartsock, this team advanced to the Sweet Sixteen despite the year-long suspension of star forward Brandon Davies for engaging in premarital sex.

ANSWER: **Brigham Young** University Cougars [accept **BYU**]

[10] This Indianapolis school, led by youthful coach Brad Stevens, reached the Sweet Sixteen after forward Matt Howard made a free throw in the last 0.8 seconds to upset top-seeded Pittsburgh. They lost the final to UConn.

ANSWER: **Butler** University Bulldogs

[10] This ACC football power and Number 10 seed, led by head coach Leonard Hamilton and Air Force veteran Bernard James, reached the Sweet Sixteen after shutting down the two-seed, Notre Dame, with stifling defense.

ANSWER: **Florida State** University Seminoles [accept **FSU**]

16. Like the quotation attributed to Danton at the beginning of this novel, most of its chapter epigraphs were invented by the author. For 10 points each:

[10] Name this novel in which Julien Sorel romances Madame de Rênal and Mathilde de la Mole. Its title refers to the military and the clergy.

ANSWER: The Red and the Black [or Le rouge et le noir]

[10] This French author wrote *The Red and the Black* and *The Charterhouse of Parma*.

ANSWER: Stendhal [or Marie-Henri Beyle]

[10] This protagonist of *The Charterhouse of Parma* takes part in the Battle of Waterloo and romances Gina, the Countess Mosca and Clélia Conti.

ANSWER: Fabrizio del Dongo [accept either; or Fabrice]

17. Answer the following about classical composers involved with Christmas carols, for 10 points each.

[10] The version of “Hark! the Herald Angels Sing” best known today was adapted from this composer’s cantata celebrating the four-hundredth anniversary of the printing press. He wrote *Elijah* and an “Italian” Symphony.

ANSWER: Felix Mendelssohn-Bartholdy

[10] This English composer wrote a popular piece for treble choir and harp entitled *A Ceremony of Carols*, as well as the *War Requiem* and *Young Person’s Guide to the Orchestra*.

ANSWER: Benjamin Britten

[10] “What Child is This” is sung to this folk melody, which also serves as the basis for a fantasia by Ralph Vaughan Williams adapted from his opera *Sir John in Love*.

ANSWER: “Greensleeves”

18. Name some things related to wave phenomena, for 10 points each:

[10] This apparent bending of a wave occurs upon its interaction with an obstacle. Its near- and far-field varieties are sometimes named for Fresnel and Fraunhofer.

ANSWER: diffraction

[10] Bragg’s law determines the diffraction patterns of X-rays with regard to these materials, defined by a repeating three-dimensional solid lattice that X-ray diffraction often helps determine.

ANSWER: crystals

[10] In this type of Fraunhofer diffraction, monochromatic light will form an alternating pattern of light and dark lines, where the equation  $d \sin \theta = n \lambda$  gives the  $\theta$  of greatest negative interference.

ANSWER: single-slit setup

19. *The Communist Manifesto* was published in January of this year; it was largely ignored, but the revolutions happened anyway. For 10 points each:

[10] Identify this Gregorian calendar year during which revolts broke out in Italian states, Hungary, Germany, Denmark, and Austria after France ushered in the Second Republic by deposing Louis-Philippe in February.

ANSWER: 1848

[10] This series of revolts against that Second Republic was instigated months later by members of the National Workshops program, an intended safety net which gave unemployed French citizens pointless jobs and little income.

ANSWER: June Days uprising [accept June Uprising or les journées de Juin]

[10] In December of 1848, this man was elected President of the Second Republic in a landslide. He ran a coup on his National Assembly in 1851 and started the Second Empire a year later.

ANSWER: Napoleon III [accept Charles Louis-Napoleon Bonaparte]

20. This three-book philosophical work argues that since only passions, not logic, prompt us to act, morality cannot be based on reason. For 10 points each:

[10] Name this work published from 1739-1740, the first by its author, which claims no ought can ever be derived from an is.

ANSWER: A Treatise of Human Nature

[10] This empiricist Scottish author of *A Treatise of Human Nature* later revisited some of its ideas in *An Enquiry Concerning the Principles of Morals*.

ANSWER: David Hume

[10] Hume attacks to this process in *An Enquiry Concerning Human Understanding*, arguing that it cannot provide a basis for making conclusions about reality. It describes the process of predicting future events from past experience.

ANSWER: induction



TB. Name some Shakespearean comedies, for 10 points each.

[10] Theseus and Hippolyta, Hermia and Lysander, and Demetrius and Helena all get married in this pastoral play of mistaken identities, fairy tricks, and magical illusions.

ANSWER: A *Midsummer Night's Dream*

[10] Cross-dressing Rosalind and her lover Orlando attempt to escape from the regime of her treacherous uncle Duke Frederick in this play, in which Jacques recites the famous "all the world's a stage" monologue.

ANSWER: *As You Like It*

[10] This "problem play" pits Angelo against the Claudio, his lover Juliet, and his sister Isabella. Duke Vincentio, disguised as a friar, foils the evil Angelo's quest to take Isabella's virginity, and restores order at the end of the play

ANSWER: *Measure for Measure*