

PRACTICE EXAM 8: NATIONAL BOARD MIDDLE CHILDHOOD GENERALIST SIMULATION (100 QUESTIONS)

This expanded 100-question study simulation follows the current approximate MC/Generalist selected-response emphasis: 30% English language arts, the arts, and health and wellness; 35% science and mathematics; and 35% social studies. Current National Board materials describe approximately 45 selected-response items and three constructed-response exercises for Component 1. This independent study aid is not an official National Board assessment. Choose the single best answer for each item before consulting the answer key and explanations.

1. A fourth grader reads the word musician as /mu-zi-KAN/, stressing the final syllable and pronouncing -cian literally. Which instruction would most directly support accurate word reading?
 - A. Teach that the ending -cian commonly represents /shun/ in words such as musician and electrician, then practice the pattern in context.
 - B. Have the student pronounce every letter separately because English suffixes always preserve one sound per letter.
 - C. Ask the student to skip the word and infer its meaning only from nearby pictures and illustrations.
 - D. Return exclusively to short-vowel CVC words without drawing attention to the recurring ending in longer words.

2. Students are sorting words such as nation, action, and motion. Which observation best supports morphological and orthographic knowledge?
 - A. The words must all have the same meaning because they end with the same four letters.
 - B. The ending -tion shows that each word is a verb written in the present tense.
 - C. The letters t-i-o-n should be pronounced as four separate sounds in every English word.
 - D. The words share the suffix -tion, which often forms nouns and is pronounced /shun/ in these examples.

3. A student reads an unfamiliar sentence and notices that the word famished is followed by the phrase 'so hungry that he ate two sandwiches immediately.' Which context-clue strategy is most useful?
 - A. Count the letters in famished and compare the total with the neighboring words.
 - B. Use the descriptive restatement after the word to infer that famished means extremely hungry.
 - C. Use only the first sound /f/ to guess a word that begins with the same consonant.
 - D. Ignore the surrounding sentence and choose the first dictionary meaning found for any similar-looking word.

4. A class reads a short story twice. On the second reading, students mark places where the author hints at an outcome that occurs later. Which literary technique are they analyzing?
- A. Flashback, because the narrative stops to describe an event that happened before the current action.
 - B. Alliteration, because nearby words repeat the same initial consonant sound for emphasis.
 - C. Foreshadowing, because earlier details provide clues about events that occur later in the story.
 - D. Onomatopoeia, because a word imitates the natural sound associated with an action or object.
5. Students compare a firsthand journal entry with a later textbook account of the same expedition. Which question best supports source analysis in English language arts?
- A. How do the writers' purposes, audiences, and access to events influence the details each source emphasizes?
 - B. Which source contains more total words, regardless of what the words communicate about the expedition?
 - C. Which source uses the larger font and therefore should automatically be considered more reliable?
 - D. Which source agrees most closely with the reader's prior opinion, making additional evidence unnecessary?
6. A student writes an argument with a strong claim and evidence but moves abruptly from one reason to the next. Which revision would most improve cohesion?
- A. Replace every short word with a longer synonym even when the meaning becomes less precise.
 - B. Delete the evidence so each paragraph contains only one unsupported opinion about the topic.
 - C. Add transitions that clarify how each reason connects to the claim and to the preceding idea.
 - D. Change the font of each paragraph to show that the reasons are different from one another.
7. A fifth grader is preparing a research report and has paraphrased an author's idea accurately. What should the student do next to use the source ethically?
- A. Remove the citation because only word-for-word quotations ever need acknowledgment in research writing.
 - B. Cite the source because paraphrased ideas still require attribution to the original author.
 - C. Change two additional words so the idea becomes the student's property and no source information is needed.
 - D. Add quotation marks around the entire report even though most of the writing is the student's own analysis.

8. Which sentence uses a semicolon correctly?

- A. The storm; ended before sunset, and the field remained muddy for practice.
- B. Because the storm ended; before sunset the field remained too muddy for practice.
- C. The storm ended before sunset; and because the field remained muddy.
- D. The storm ended before sunset; the field remained too muddy for practice.

9. A narrative shifts from 'I opened the door' to 'you walk into the room' without a deliberate stylistic reason. What is the main revision need?

- A. Maintain a consistent point of view unless a purposeful shift is clearly signaled.
- B. Replace all verbs with nouns so the narrator no longer needs a grammatical point of view.
- C. Add more adjectives to each sentence because description automatically corrects pronoun inconsistency.
- D. Change every sentence to a question so readers will not notice the shift between narrators.

10. A poem repeats the line 'Still we rise' at the end of several stanzas. What is the most likely effect of this refrain?

- A. It proves that every statement in the poem is factual because repeated language cannot be figurative.
- B. It changes the poem into a dictionary entry by defining each word through exact repetition.
- C. It guarantees that every stanza has the same number of syllables regardless of the other lines.
- D. It reinforces a central idea and creates a recurring rhythmic and emotional emphasis.

11. During a discussion of an informational article, which teacher prompt best pushes students from recall toward analysis?

- A. What is the title printed at the top of the article?
- B. How many paragraphs appear between the introduction and the conclusion?
- C. Which evidence links the proposed cause to the reported effect, and how convincing is that connection?
- D. Which vocabulary word on the page contains the greatest number of letters?

12. A student says, 'The author must support school uniforms because the article lists several benefits first.' What is the best teacher response?

- A. Confirm the inference immediately because the first idea in any article always reveals the author's final position.
- B. Ask the student to examine the whole article for the author's explicit claim, evidence, counterarguments, and concluding position.
- C. Tell the student that article organization is never relevant when readers analyze an author's purpose or stance.
- D. Require the student to choose a position based only on the accompanying photograph rather than the written argument.

13. Which feedback is most useful after a student drafts an explanatory paragraph with accurate facts but weak elaboration?

- A. Good job. There is nothing more to revise because factual accuracy is the only feature that matters.
- B. Your facts are accurate; now explain why each fact matters and how it supports the paragraph's main idea.
- C. Make the paragraph longer by adding any details you can remember, even when they do not connect to the topic.
- D. Change the handwriting style throughout the paragraph so the explanation appears more sophisticated to readers.

14. Students are evaluating websites about a proposed community project. Which feature is the strongest reason to question a site's credibility?

- A. The page uses headings and subheadings to organize information for readers who scan the content.
- B. The page includes a publication date and identifies the organization responsible for maintaining the site.
- C. The page links to original reports and explains where numerical claims in the article were obtained.
- D. The page makes sweeping factual claims but provides no author, evidence, publication information, or links to supporting sources.

15. A drawing uses overlapping objects, smaller distant figures, and converging lines toward a point on the horizon. Which visual-art concept is most evident?

- A. Linear perspective and spatial depth, because the artist uses size and converging lines to suggest distance.
- B. Texture only, because every object must feel rough when lines overlap on a flat surface.
- C. Symmetry only, because perspective requires identical shapes on both sides of a central axis.
- D. Monochromatic color, because spatial depth can be created only by using one hue in many values.

- 16.** An art teacher asks students to compare a charcoal drawing with a glossy photograph of the same tree. Which element is most useful for discussing how the surfaces appear to feel?
- A. Tempo, which describes the speed at which a piece of music is performed over time.
 - B. Meter, which organizes recurring groups of beats in music rather than surface qualities in art.
 - C. Texture, including both actual texture and the illusion of texture represented visually.
 - D. Pitch, which refers to the perceived highness or lowness of a sound rather than visual surfaces.
- 17.** In music, a passage is marked crescendo. What should performers do?
- A. Gradually increase the loudness of the music over the indicated passage.
 - B. Gradually slow the tempo until the passage ends, regardless of any other markings.
 - C. Move every note to a higher pitch while keeping the volume unchanged throughout the passage.
 - D. Change the instrument's tone color abruptly while maintaining the same dynamic level.
- 18.** A choreographer asks dancers to repeat the same short movement phrase one after another, with each dancer beginning a few counts later. What structure is being used?
- A. Unison, because all dancers perform the entire phrase at exactly the same moment.
 - B. Solo, because only one dancer performs while all other dancers remain absent from the work.
 - C. Canon, because the same movement sequence begins at staggered times among performers.
 - D. Freeze, because every dancer holds one still shape without repeating or sequencing movement.
- 19.** A student wants to improve cardiorespiratory endurance. Which activity plan best matches that goal?
- A. Perform one brief maximal-strength effort each week and avoid sustained movement during the rest of the week.
 - B. Engage regularly in sustained rhythmic activities such as brisk walking, cycling, or swimming at an appropriate intensity.
 - C. Practice only flexibility stretches while keeping the heart rate near resting level throughout every session.
 - D. Replace physical activity with reading about exercise because knowledge alone produces the same cardiovascular adaptation.

20. Which behavior best reduces the risk of heat-related illness during outdoor physical activity on a hot day?

- A. Wear multiple heavy insulating layers so sweating is trapped close to the body throughout the activity.
- B. Avoid drinking until severe thirst occurs because early hydration interferes with the body's temperature regulation.
- C. Increase the workout intensity during the hottest period so the activity ends sooner regardless of symptoms.
- D. Use planned hydration, appropriate clothing, rest breaks, and reduced intensity when heat conditions are demanding.

21. A student sleeps about five hours on school nights and reports difficulty concentrating in morning classes. Which recommendation is most appropriate?

- A. Establish a consistent sleep schedule that allows substantially more nightly sleep and reduces late-night screen use.
- B. Use highly caffeinated drinks late each evening so the student can remain awake long enough to finish more tasks.
- C. Sleep less on weekdays and try to replace all missed sleep during one long weekend morning every week.
- D. Keep bright screens active in bed because stimulating light reliably helps the brain prepare for restful sleep.

22. A student's friends pressure her to ride a bicycle without a helmet because 'it is only a short trip.' Which response best demonstrates a healthy refusal skill?

- A. Agree to ride without a helmet so the group will not think the student is being overly cautious.
- B. Avoid answering and quietly follow the group, because safety decisions are best made by the majority.
- C. State the refusal clearly, give a brief safety reason, and suggest an alternative such as getting a helmet before riding.
- D. Insult the friends personally so they will stop asking, even if the disagreement becomes more intense.

23. Why does washing hands with soap and water before eating help reduce the spread of many illnesses?

- A. Soap permanently sterilizes the entire body and guarantees that a person cannot become sick from any source.
- B. Soap and rubbing help remove microbes and material that can carry them from the hands before they reach the mouth or food.
- C. Handwashing works mainly by increasing body temperature until all microorganisms in the environment are destroyed.
- D. Water changes harmful microorganisms into vitamins that the body can use during digestion.

24. A student receives a message claiming that a common food 'cures every cold overnight' and asks whether to share it. What is the best health-literacy response?

- A. Share the message immediately because a confident tone is evidence that the health claim has been scientifically proven.
- B. Check the claim against credible medical or public-health sources before sharing it, especially because the promise is absolute.
- C. Assume the claim is accurate if many classmates have forwarded it, since popularity reliably establishes medical effectiveness.
- D. Judge the claim only by whether the image looks professional, because visual design is the strongest indicator of scientific quality.

25. Which classroom routine best supports safe participation before students begin a new movement activity?

- A. Begin with the most difficult version immediately so students learn safety by experiencing mistakes at full speed.
- B. Allow students to invent equipment rules independently while the activity is already underway and crowded.
- C. Remove all warm-up and demonstration time because safety improves when students spend every minute moving rapidly.
- D. Explain and model the movement, identify space and equipment boundaries, and have students practice at controlled intensity first.

- 26.** A student wants to improve flexibility in the hamstrings. Which practice is most appropriate?
- A. Bounce forcefully at the end of the range so the muscle is repeatedly pushed past discomfort.
 - B. Train only the upper-body muscles because flexibility in one body region automatically transfers to every other region.
 - C. Avoid warming up or moving beforehand because cold muscles are always more prepared for deep stretching.
 - D. Use controlled stretches that target the hamstrings and hold them without bouncing, within a comfortable range.
- 27.** During a digital-media lesson, students find a dramatic image attached to a news post. Which step best helps verify whether the image actually shows the event described?
- A. Assume the image is authentic because photographs cannot be reused with misleading captions after they are published.
 - B. Decide credibility from the number of likes on the post because high engagement proves the image's context is correct.
 - C. Trace the image to its original source or earlier uses and compare the date, location, and caption with reliable reporting.
 - D. Ignore the image source and evaluate only whether the colors and composition make the picture look realistic.
- 28.** Which sentence best demonstrates precise academic language in a science explanation?
- A. The water vapor condensed when it cooled, forming liquid droplets on the outside of the container.
 - B. The water did a thing when it got different and made stuff show up on the container.
 - C. The container was kind of wet somehow, which is basically what always happens with science things.
 - D. The droplets appeared because water is nice and likes to stay close to cold objects whenever possible.
- 29.** A student presentation contains copied sentences from a website on several slides but no source information. What should the teacher require before publication?
- A. Rewrite copied passages as quotations or paraphrases as appropriate and provide clear source attribution for borrowed ideas and wording.
 - B. Keep the copied wording unchanged because digital slides are exempt from the attribution expectations used in written reports.
 - C. Delete the author's name from the website so classmates cannot tell where the information originally appeared.
 - D. Change only the slide background color because visual redesign is sufficient to make copied language original work.

30. In a play script, a line in parentheses says '(crosses to the window and lowers her voice).' What is the function of this notation?

- A. It is a footnote that provides a scholarly citation for a historical claim made in the play.
- B. It is a rhyme scheme that tells the actor which final sounds must repeat across the scene.
- C. It is a chapter heading that signals the beginning of a new prose section narrated outside the drama.
- D. It is a stage direction that guides movement and delivery rather than dialogue spoken by the character.

31. A map shades each county from light to dark according to population density. What is the map primarily designed to show?

- A. The exact elevation of every point in each county using contour lines and benchmark measurements.
- B. A thematic pattern showing how one characteristic, population density, varies across geographic areas.
- C. Only the locations of national borders, with no information about differences among counties.
- D. A step-by-step travel route that gives turn-by-turn directions between two specific addresses.

32. After a new rail station opens, nearby blocks gain apartments, shops, and more pedestrian traffic. Which conclusion best reflects a human-geography relationship?

- A. Transportation systems have no effect on where people live, work, shop, or invest once a city is established.
- B. A rail station changes only the natural climate of a neighborhood and cannot affect human activity or development.
- C. Transportation infrastructure can influence land use, settlement patterns, and economic activity around accessible locations.
- D. Any increase in nearby businesses proves that every resident has identical transportation needs and income.

33. Which number is prime?

- A. 21
- B. 27
- C. 29
- D. 39

34. Which decimal is between 0.4 and 0.5?

- A. 0.39
- B. 0.54
- C. 0.56
- D. 0.46

35. What is $\frac{3}{5} + \frac{1}{4}$?

- A. $\frac{4}{9}$
- B. $\frac{17}{20}$
- C. $\frac{7}{10}$
- D. $\frac{16}{20}$

36. A student has 3.6 liters of juice and pours it equally into 8 containers. How much juice goes in each container?

- A. 0.45 liter.
- B. 0.045 liter.
- C. 2.88 liters.
- D. 4.5 liters.

37. What is the greatest common factor of 42 and 70?

- A. 7
- B. 21
- C. 14
- D. 28

38. Which expression uses the distributive property to rewrite $18 + 42$?

- A. $6 + (3 + 7)$
- B. $3(6 + 7)$
- C. $2(9 + 42)$
- D. $6(3 + 7)$

39. A rectangle has area 96 square centimeters and width 8 centimeters. What is its length?

- A. 8 centimeters.
- B. 12 centimeters.
- C. 16 centimeters.
- D. 24 centimeters.

40. A quadrilateral has interior angles of 90° , 110° , 85° , and x° . What is x ?

- A. 65°
- B. 85°
- C. 95°
- D. 75°

- 41.** A circle has a diameter of 18 centimeters. What is its radius?
- A. 9 centimeters.
 - B. 18 centimeters.
 - C. 36 centimeters.
 - D. 81 centimeters.
- 42.** During 40 trials of an experiment, a marble lands in a target area 14 times. What is the experimental probability of landing in the target area?
- A. $\frac{7}{40}$
 - B. $\frac{13}{20}$
 - C. $\frac{7}{20}$
 - D. $\frac{20}{7}$
- 43.** A bar graph shows 6 students chose apples, 9 chose bananas, 5 chose oranges, and 10 chose grapes. How many students are represented in all?
- A. 30
 - B. 24
 - C. 19
 - D. 36
- 44.** A line plot shows plant heights of 7, 7, 8, 9, 9, 9, and 11 centimeters. What is the range?
- A. 2 centimeters.
 - B. 4 centimeters.
 - C. 7 centimeters.
 - D. 9 centimeters.
- 45.** A triangle is rotated 90° about a point. Which statement must be true about the image?
- A. Every side becomes twice as long because rotation increases distance from the center.
 - B. The triangle's angle measures change so that the total is greater than 180° .
 - C. The image must become a mirror reflection with reversed orientation across a line.
 - D. Corresponding side lengths and angle measures are preserved, although the triangle's position changes.

46. A map is drawn on a coordinate grid. The school is at $(-2, 5)$ and the library is at $(-2, -1)$. What is the vertical distance between them?

- A. 4 units.
- B. 5 units.
- C. 6 units.
- D. 7 units.

47. Which value makes the equation $4(n - 3) = 28$ true?

- A. 10
- B. 4
- C. 7
- D. 14

48. A taxi charges a \$4 starting fee plus \$2 for each mile traveled. Which expression gives the total cost for m miles?

- A. $\$6m$
- B. $\$4 + \$2m$
- C. $\$4m + \2
- D. $\$2(m + 4)$

49. A store marks a \$60 backpack down by 20%. What is the sale price?

- A. \$12
- B. \$48
- C. \$40
- D. \$72

50. A runner completes 5 equal laps in 12.5 minutes. At that constant pace, how many minutes does one lap take?

- A. 2.5 minutes.
- B. 7.5 minutes.
- C. 17.5 minutes.
- D. 62.5 minutes.

51. A student says, 'Multiplying always makes a number larger.' Which teacher response best addresses the misconception?
- A. Confirm the rule because every multiplication problem produces an answer greater than both factors.
 - B. Avoid examples with fractions or decimals so the student can keep using the rule without encountering exceptions.
 - C. Use a visual model to show, for example, that $8 \times \frac{1}{2}$ means one-half of 8 and equals 4, then compare multiplication by factors greater than, equal to, and less than 1.
 - D. Tell the student to memorize that multiplication sometimes gets smaller without connecting the idea to factor size or a representation.
52. Which statement about a triangle with side lengths 5 cm, 5 cm, and 8 cm is true?
- A. It is equilateral because all three side lengths are equal to one another.
 - B. It is scalene because no two side lengths are equal to one another.
 - C. It cannot form a triangle because $5 + 5$ is less than 8.
 - D. It is isosceles because exactly two side lengths are equal.
53. A tightly sealed metal container is warmed slightly, causing the metal to expand. Which particle-level explanation best accounts for the expansion?
- A. The particles vibrate more vigorously and, on average, occupy slightly more space while remaining part of the same material.
 - B. Heating creates entirely new atoms inside the metal, so the container becomes a different element.
 - C. The particles stop moving as thermal energy increases, causing the metal lattice to spread apart.
 - D. All particles leave the metal and are replaced by empty space, which increases the container's size.
54. An astronaut takes the same rock from Earth to the Moon. Which statement best compares the rock's mass and weight?
- A. Its mass and weight both become zero because the Moon has no gravity at its surface.
 - B. Its mass decreases greatly, but its weight stays exactly the same because weight does not depend on gravity.
 - C. Its mass and weight both increase because moving away from Earth automatically adds matter to the rock.
 - D. Its mass stays essentially the same, but its weight is lower on the Moon because the Moon's gravitational pull is weaker.

55. A beam of light strikes a smooth mirror. Which statement best describes reflection?
- A. The light is completely destroyed at the surface and no energy leaves the mirror afterward.
 - B. The light always bends toward the normal because mirrors primarily demonstrate refraction through a new medium.
 - C. The light bounces from the surface, and the angle of reflection equals the angle of incidence.
 - D. The mirror converts all incoming light into sound waves that travel back along the same path.
56. A flashlight shines toward an opaque book, producing a dark region on the wall behind it. Why does the shadow form?
- A. The book creates darkness as a new form of matter that travels from its cover to the wall.
 - B. The book blocks light traveling toward the wall, so less light reaches the region directly behind the book.
 - C. The wall becomes magnetic when illuminated, pulling the light away from the area behind the book.
 - D. The flashlight stops producing light whenever an opaque object is placed anywhere in the room.
57. A vacuum-insulated bottle has two walls with very little matter between them. How does the vacuum help slow heat transfer?
- A. The vacuum produces extra thermal energy that keeps hot and cold liquids at exactly the same temperature.
 - B. The vacuum increases the number of particles available to collide, so conduction becomes much faster.
 - C. With very few particles between the walls, conduction and convection through that space are greatly reduced.
 - D. The vacuum stops radiation completely because electromagnetic energy cannot travel through empty space.
58. Which plant structures are small openings, usually on leaves, that regulate much of the exchange of carbon dioxide, oxygen, and water vapor with the air?
- A. Petals.
 - B. Stomata.
 - C. Seeds.
 - D. Root caps.

59. Which process removes carbon dioxide from the atmosphere and stores some of its carbon in sugars made by plants?

- A. Combustion.
- B. Cellular respiration.
- C. Decomposition.
- D. Photosynthesis.

60. Why can siblings produced by sexual reproduction differ from one another even though they have the same two parents?

- A. Each offspring can inherit a different combination of alleles from the parents, creating genetic variation among siblings.
- B. All siblings inherit exactly the same allele combination, so any visible difference proves that genes are irrelevant.
- C. Sexual reproduction removes inherited information and replaces it entirely with traits acquired after birth.
- D. Every trait is determined only by the environment, so parental genetic information has no role in offspring.

61. Which event would most likely begin primary succession?

- A. A mowed lawn grows taller after several weeks without being cut.
- B. A forest regrows after a fire that leaves much of the soil intact.
- C. A garden is replanted in soil that has supported plants for many years.
- D. New bare rock is exposed by a retreating glacier where no soil is present.

62. Why are seasons generally opposite in the Northern and Southern Hemispheres?

- A. Earth's tilted axis causes one hemisphere to receive more direct sunlight and longer days while the other receives less direct sunlight and shorter days.
- B. Earth moves much closer to the Sun during one hemisphere's summer and much farther away during the other hemisphere's summer.
- C. The Moon blocks sunlight from one hemisphere for several months and then moves to block the other hemisphere.
- D. Earth's rotation stops briefly twice each year, changing the amount of sunlight received by each hemisphere.

63. Which arrangement is required for a lunar eclipse?

- A. The Sun, Moon, and Earth align with the Moon between the Sun and Earth.
- B. Earth moves between Venus and Mars while the Moon remains on the opposite side of the sky.
- C. The Sun, Earth, and Moon align with Earth between the Sun and the Moon.
- D. The Moon passes directly above Earth's North Pole without entering any region of Earth's shadow.

64. Which weather instrument is used to measure air pressure?

- A. A rain gauge.
- B. A barometer.
- C. An anemometer.
- D. A thermometer.

65. A fast-moving stream carries sediment downhill. When the stream enters a calm lake, much of the sediment settles. Which process is occurring in the lake?

- A. Weathering, because solid rock is being broken down in place without any movement of material.
- B. Evaporation, because liquid water is changing into vapor and leaving all sediment suspended permanently.
- C. Deposition, because transported sediment is being dropped as water movement slows.
- D. Metamorphism, because heat and pressure deep underground are transforming the sediment into new rock immediately.

66. A mineral scratches glass but is scratched by quartz. Which property is being tested?

- A. Luster, which describes how light reflects from the mineral's surface.
- B. Streak, which is the color of a mineral's powdered form on a testing plate.
- C. Cleavage, which describes how a mineral tends to break along flat planes.
- D. Hardness, or resistance to scratching.

67. Students design paper bridges to hold as many washers as possible while using no more than one sheet of paper. Why is the one-sheet rule important in engineering design?

- A. It establishes a constraint that designs must satisfy while students optimize performance.
- B. It guarantees that every group will produce exactly the same bridge shape and identical test result.
- C. It removes the need to test prototypes because any design made from one sheet must already meet the goal.
- D. It converts the activity into pure artistic decoration, so load capacity no longer needs to be measured.

- 68.** Why are standard time zones arranged mainly in broad north-south bands around the world?
- A. Because latitude alone determines the exact clock time at every location regardless of east-west position.
 - B. Because Earth rotates, locations farther east or west face the Sun at different times, so longitude is closely related to local solar time.
 - C. Because mountain elevation changes Earth's rotation speed enough to require a different clock time at each altitude.
 - D. Because the Moon passes over each north-south band once per hour and directly sets civil time.
- 69.** A region has hot summers, mild winters, and very little annual precipitation. Which human adaptation would most directly address the climate?
- A. Designing every roof primarily to shed several meters of annual snowfall throughout the entire year.
 - B. Using water-conserving irrigation and building practices suited to heat and scarce rainfall.
 - C. Planning agriculture around constant tropical rainfall with no need to store or conserve water.
 - D. Building transportation systems only on frozen ground because permafrost remains permanent in the region.
- 70.** A coastal city lies at the mouth of a navigable river and has a protected natural harbor. Why might this location favor the city's growth as a trade center?
- A. A harbor guarantees that the city will never experience storms, flooding, competition, or shortages of resources.
 - B. Being near water prevents merchants from reaching inland communities and limits exchange to only local neighborhoods.
 - C. River and sea access eliminates transportation costs completely, so every good can move without labor, time, or infrastructure.
 - D. It provides access to both inland river routes and sea routes, making movement of goods and people between regions easier.
- 71.** Which feature of the Iroquois Confederacy is most relevant to a lesson on political cooperation?
- A. Multiple nations formed a confederacy and used shared governing traditions to address common concerns.
 - B. Every Indigenous nation in North America became part of one identical government with a single local culture.
 - C. The confederacy abolished all individual communities and required people to abandon distinct languages and traditions.
 - D. Its main purpose was to establish direct colonial rule by European monarchs over the nations of the Northeast.

72. Why did some early U.S. manufacturing towns develop where rivers dropped sharply in elevation along the fall line?

- A. The fall line made every river completely dry, which allowed factories to operate without any water or transportation links.
- B. Factories located there mainly because steep river drops prevented machinery from using mechanical energy.
- C. The change in elevation could provide waterpower for mills and created useful locations where river transportation conditions changed.
- D. The fall line guaranteed identical crops, labor supplies, and market access in every town from New England to the Deep South.

73. What was a major purpose of the Northwest Ordinance of 1787?

- A. It created a process for governing western territories and admitting new states to the Union.
- B. It established the first national income tax and required every resident of the territories to pay it directly to Congress.
- C. It transferred all land west of the Appalachian Mountains permanently to Great Britain after the American Revolution.
- D. It ended the possibility of creating new states by declaring that all western territory would remain federal land forever.

74. What is one important function of a state constitution in the United States?

- A. It authorizes the state to ignore any part of the U.S. Constitution whenever state officials disagree with federal law.
- B. It establishes the structure and powers of state government and can protect rights within the framework of the U.S. Constitution.
- C. It serves only as a historical document and has no role in organizing current state institutions or legal authority.
- D. It replaces all local laws, federal statutes, and court decisions with one identical set of rules for every state.

75. Why do congressional committees hold hearings on proposed legislation?

- A. Hearings transfer Congress's lawmaking power permanently to witnesses who testify before the committee.
- B. Hearings allow a committee to amend the Constitution by itself without action by Congress or the states.
- C. Hearings allow members to gather testimony, examine evidence and competing views, and develop a record that can inform legislative decisions.
- D. Hearings require courts to approve every proposed bill before members of Congress may discuss its policy effects.

76. A public school plans to suspend a student for a serious rule violation. Which action most clearly reflects the principle of due process?

- A. Impose the punishment secretly and refuse to tell the student what conduct is alleged to have occurred.
- B. Decide the outcome only from an anonymous rumor and prohibit the student from offering any relevant information.
- C. Allow punishment to depend entirely on whether other students personally like the accused student.
- D. Give the student notice of the allegation and a fair opportunity to respond before the school reaches the disciplinary decision.

77. What is the primary purpose of the census required by the U.S. Constitution?

- A. To count the population for representation and related governmental purposes, including apportioning seats in the House of Representatives.
- B. To determine which political party each resident must join before participating in any election.
- C. To assign every household the same income so economic differences disappear after each count.
- D. To replace state and local elections with a single nationwide vote conducted only once every ten years.

78. Why did the United States and Britain fight the War of 1812?

- A. Britain attempted to enforce the U.S. Constitution within every American state after ratifying it as British law.
- B. The United States declared war primarily to stop construction of the transcontinental railroad before the Civil War.
- C. Disputes included British interference with American shipping, impressment of sailors, and broader tensions over sovereignty and frontier conflict.
- D. The conflict began because Britain purchased the Louisiana Territory from France and refused to transfer it to the United States.

79. What idea did the Monroe Doctrine announce to European powers?

- A. The United States promised to transfer all western territories back to European empires that had previously claimed them.
- B. The United States agreed that European monarchies could establish unlimited new colonies anywhere in the Western Hemisphere.
- C. The United States declared that it would permanently stop all trade, diplomacy, and communication with every European nation.
- D. The United States opposed new European colonization in the Americas and treated further intervention as a matter of concern.

80. Why did many abolitionists publish narratives written by formerly enslaved people?

- A. The narratives were intended mainly to prove that slavery had already disappeared from every state before the Civil War.
- B. Firsthand accounts could expose the realities of slavery and challenge proslavery claims with personal testimony.
- C. The narratives were written to persuade Congress to expand plantation slavery into every western territory without debate.
- D. The narratives avoided discussing slavery and focused only on unrelated European political events from earlier centuries.

81. Which reform demand was central to the early women's rights movement in the United States?

- A. Removing women from all public education so political participation would become less likely over time.
- B. Ending every form of property ownership by women and transferring all legal control to distant federal officials.
- C. Expanding women's legal and political rights, including the demand for suffrage.
- D. Requiring women to obtain hereditary titles before they could speak at any public reform meeting.

82. Why did early textile mills in places such as Lowell, Massachusetts, become important to U.S. industrialization?

- A. They concentrated workers and machinery in factory production, helping shift textile manufacturing from household production toward larger-scale industry.
- B. They ended the use of machines in textile production and returned most cloth making permanently to isolated household workshops.
- C. They were designed mainly as military forts and had little connection to wage labor, manufacturing, or changing patterns of production.
- D. They eliminated regional trade by requiring every factory to produce all food, fuel, clothing, and machinery for itself.

83. How did the growth of railroads affect the United States during the nineteenth century?

- A. Railroads made long-distance transportation slower than wagon travel and therefore reduced trade among regions.
- B. Railroads permanently ended urban growth because factories could no longer receive raw materials or ship finished goods.
- C. Railroads eliminated the need for standardized time and communication because trains operated without schedules or coordination.
- D. Railroads connected regional markets, accelerated movement of people and goods, and encouraged settlement and industrial growth.

84. Why was the Emancipation Proclamation historically significant?

- A. It immediately abolished slavery everywhere in the United States, including loyal slaveholding border states, without any later constitutional amendment.
- B. It declared enslaved people in areas in rebellion to be free and made emancipation an explicit Union war aim.
- C. It ended the Civil War on the day it was issued by requiring every Confederate army to surrender immediately.
- D. It established universal voting rights for all adults in every state and territory regardless of race or sex.

85. What was a major purpose of the Morrill Act of 1862?

- A. To prohibit states from creating public colleges and reserve all higher education for private religious institutions.
- B. To require every college student to become a federal employee immediately after graduation, regardless of field of study.
- C. To support colleges that expanded practical higher education, including agriculture and the mechanical arts, through federal land grants to states.
- D. To end agricultural research and prevent colleges from teaching subjects connected to farming, engineering, or applied science.

86. During Reconstruction, why were Black Codes controversial?

- A. They were federal laws requiring every former Confederate state to provide equal political power immediately to all residents.
- B. They abolished all racial restrictions throughout the South and guaranteed land ownership to every formerly enslaved family.
- C. They were military plans for rebuilding railroads that contained no rules affecting labor, movement, contracts, or civil status.
- D. They restricted the freedom and economic opportunities of formerly enslaved people and attempted to preserve racial control after slavery.

87. What was one major goal of the Populist movement in the late nineteenth century?

- A. To restore hereditary monarchy in the United States and end elections for federal and state offices.
- B. To address economic pressures on farmers and workers through reforms involving currency, railroads, and political power.
- C. To prohibit farmers from organizing cooperatives or discussing railroad rates and credit conditions with one another.
- D. To end all federal and state regulation of corporations because the movement opposed any public role in economic policy.

88. Why did many immigrants settle in U.S. cities during the late nineteenth and early twentieth centuries?

- A. Cities offered industrial jobs, transportation connections, and established ethnic communities that could provide networks and support.
- B. Federal law required every immigrant to live permanently in the largest city and prohibited settlement in rural areas.
- C. Industrial cities had no factories or wage employment, so newcomers moved there mainly to avoid all economic opportunity.
- D. Urban neighborhoods prevented people from maintaining cultural, religious, or family ties because community organizations were illegal.

89. What was a major purpose of the direct primary, a reform adopted in many states during the Progressive Era?

- A. To end elections by allowing business corporations to appoint all state and local officeholders.
- B. To prevent ordinary voters from participating in candidate selection until after the general election.
- C. To give party voters a more direct role in choosing candidates rather than leaving nominations mainly to party leaders or conventions.
- D. To require every political office to be inherited within one family rather than filled through elections.

90. How did the spread of commercial radio in the 1920s affect U.S. popular culture and communication?

- A. It allowed news, entertainment, music, sports, and advertising to reach large audiences rapidly through shared broadcasts.
- B. It ended all printed newspapers immediately because people were legally prohibited from reading news on paper.
- C. It limited communication to people physically connected by telegraph wires inside the same building.
- D. It prevented national audiences from hearing the same performers or events because every receiver produced unrelated programs.

91. Why was the Federal Deposit Insurance Corporation created during the New Deal?

- A. To require every household to invest all savings in the stock market instead of keeping money in banks.
- B. To insure eligible bank deposits and strengthen public confidence in the banking system after widespread bank failures.
- C. To eliminate all private banks and replace them permanently with a single national store that issued household goods.
- D. To guarantee that every investment would increase in value regardless of market conditions or business performance.

92. Why did the federal government establish Social Security during the New Deal?

- A. To replace all public schools with federal employment offices operated directly from Washington, D.C.
- B. To prohibit retirement and require every older adult to remain in full-time employment indefinitely.
- C. To guarantee that stock prices could never fall again by setting a permanent national price for every share.
- D. To create a national system of old-age benefits and related social insurance protections.

93. What was a major purpose of the Servicemen's Readjustment Act of 1944, commonly called the GI Bill?

- A. To require all returning veterans to remain on active military duty permanently after World War II ended.
- B. To prohibit veterans from attending colleges or vocational programs so civilian educational spaces would remain unchanged.
- C. To help eligible veterans transition to civilian life through benefits that included education or training and support related to housing and employment.
- D. To eliminate federal assistance for veterans and transfer every benefit decision exclusively to private employers.

94. What was the purpose of the Marshall Plan after World War II?

- A. To divide the United States into military occupation zones administered by European governments after the war.
- B. To provide economic assistance for European recovery and help stabilize war-damaged economies.
- C. To require European countries to stop rebuilding factories, transportation networks, and food production after wartime destruction.
- D. To replace the United Nations with a single U.S. agency that controlled every European election and local government.

95. What did the Supreme Court decide in *Gideon v. Wainwright*?

- A. States may permanently deny criminal defendants access to attorneys whenever the prosecution believes the evidence is strong.
- B. The federal government must provide a free lawyer for every civil dispute involving private contracts, regardless of the case type.
- C. Criminal trials can proceed without judges or juries if the defendant cannot afford to hire a private attorney.
- D. States must provide counsel to indigent defendants charged with serious crimes when they cannot afford an attorney.

96. What was one major purpose of the Civil Rights Act of 1964?

- A. To prohibit discrimination in major areas of public life, including public accommodations and employment, on specified protected grounds.
- B. To require racial segregation in restaurants, hotels, schools, and workplaces throughout every state.
- C. To abolish elections for Congress and replace representative government with permanent appointed councils.
- D. To restrict interstate travel by requiring citizens to obtain federal permission before crossing any state boundary.

97. Why is the Watergate scandal significant in U.S. political history?

- A. It established the first written U.S. Constitution and created the presidency during the eighteenth century.
- B. It ended the Civil War by producing the surrender of the main Confederate army at Appomattox Court House.
- C. It caused the United States to join World War I immediately after Germany declared unrestricted submarine warfare.
- D. It led to investigations of abuses of executive power and contributed to President Richard Nixon's resignation.

98. A household budget includes rent, groceries, and entertainment. Which expense is usually the best example of a fixed expense over a short budgeting period?

- A. The amount spent on restaurant meals.
- B. The amount spent on optional entertainment.
- C. The monthly rent specified in a lease.
- D. The amount spent on groceries that varies with purchases.

99. What does compound interest mean for money kept in an interest-bearing account?

- A. The account earns interest only once, and all later interest calculations ignore any interest previously credited.
- B. Interest is calculated on the original principal and, over time, on interest that has already been added to the balance.
- C. The bank removes the principal after each interest period, so the saver can earn interest only on a zero balance.
- D. Compound interest guarantees the same dollar gain in every period regardless of the account balance or interest rate.

100. A family places money in a savings account that earns interest. What is the basic economic reason a bank pays interest to the saver?

- A. The saver allows the bank to use the funds for a period of time, and interest compensates the saver for that use and delay.
- B. Interest is a government fine charged whenever households choose not to spend every dollar immediately.
- C. Banks pay interest because savings accounts guarantee that money can never lose purchasing power from inflation.
- D. Interest means the bank permanently gives ownership of the entire bank to anyone who makes a deposit.

Practice Exam 8: Answer Key

Use this compact key to score the exam before reading the detailed explanations.

1-20	21-40	41-60	61-80	81-100
1. A	21. A	41. A	61. D	81. C
2. D	22. C	42. C	62. A	82. A
3. B	23. B	43. A	63. C	83. D
4. C	24. B	44. B	64. B	84. B
5. A	25. D	45. D	65. C	85. C
6. C	26. D	46. C	66. D	86. D
7. B	27. C	47. A	67. A	87. B
8. D	28. A	48. B	68. B	88. A
9. A	29. A	49. B	69. B	89. C
10. D	30. D	50. A	70. D	90. A
11. C	31. B	51. C	71. A	91. B
12. B	32. C	52. D	72. C	92. D
13. B	33. C	53. A	73. A	93. C
14. D	34. D	54. D	74. B	94. B
15. A	35. B	55. C	75. C	95. D
16. C	36. A	56. B	76. D	96. A
17. A	37. C	57. C	77. A	97. D
18. C	38. D	58. B	78. C	98. C
19. B	39. B	59. D	79. D	99. B
20. D	40. D	60. A	80. B	100. A

Practice Exam 8: Detailed Explanations

- 1. A** - The error involves an advanced orthographic pattern rather than basic letter naming. Explicitly teaching the recurring -cian to /shun/ correspondence helps the student connect spelling, pronunciation, and morphology across multiple words. Guessing from pictures does not strengthen decoding, pronouncing every letter ignores English spelling conventions, and returning only to CVC words misses the demonstrated need.
- 2. D** - Recognizing -tion as a recurring suffix connects spelling with word structure and pronunciation. In these examples it forms nouns and is pronounced /shun/, giving students a transferable pattern for reading and vocabulary. Shared spelling does not make the base meanings identical, the words are not automatically verbs, and the letters are not pronounced as four separate phonemes in these forms.
- 3. B** - The phrase after famished restates the condition in concrete terms, so it supplies a descriptive definition clue. Linking the unfamiliar word to 'so hungry' supports meaning without interrupting comprehension. Letter counting and first-sound guessing do not reveal semantics, while ignoring context can lead to choosing an unrelated definition. Skilled readers integrate local clues with word knowledge.
- 4. C** - Foreshadowing plants clues that prepare readers for later developments, so reviewing earlier hints after knowing the ending makes the technique visible. A flashback shifts to earlier time, while alliteration and onomatopoeia concern sound patterns in language rather than narrative anticipation. Identifying the distinction helps students connect author craft to suspense, prediction, and structure.
- 5. A** - Source analysis asks students to consider how purpose, audience, perspective, and access shape a text. A participant's journal and a later synthesis may emphasize different details for legitimate reasons. Word count and font size do not establish reliability, and choosing the source that confirms a prior belief encourages confirmation bias. Comparison should focus on evidence and context.
- 6. C** - Cohesion depends on clear relationships among ideas. Purposeful transitions can signal addition, contrast, cause, or sequence and help readers follow how each reason supports the claim. Longer vocabulary is not automatically clearer, deleting evidence weakens the argument, and formatting changes do not explain logical connections. Revision should improve meaning and organization rather than decoration.
- 7. B** - Paraphrasing changes wording but not ownership of the underlying idea, so attribution is still required. Citation allows readers to trace evidence and distinguishes source material from the writer's contribution. Changing a few words does not remove the obligation, quotation marks are for direct wording, and omitting attribution can misrepresent another author's thinking as one's own.
- 8. D** - A semicolon can join two closely related independent clauses without a coordinating conjunction. Both parts of the correct sentence can stand alone, and their meanings are connected. The distractors place a semicolon inside a clause or create a fragment after it. Punctuation should reflect sentence structure, not simply mark a long pause in speech.

9. A - Unplanned movement from first person to second person can confuse readers about who is narrating and experiencing events. Revising for a consistent point of view preserves narrative coherence unless a shift serves a clear purpose. Adding adjectives, converting verbs to nouns, or changing sentence type does not resolve the pronoun and perspective inconsistency that causes the problem.

10. D - A refrain is a repeated line or phrase that can unify a poem, reinforce theme, and create rhythm or emphasis. Repetition does not make language factual, define vocabulary automatically, or determine the syllable count of entire stanzas. Students should connect the repeated phrase to the poem's developing meaning and to the emotional effect created by recurrence.

11. C - Analytical questions ask students to examine relationships, evidence, reasoning, or craft rather than merely retrieve surface information. Evaluating how evidence supports a causal claim requires interpretation and judgment. Identifying a title, counting paragraphs, or finding the longest word may involve attention to text features, but those tasks do not assess whether students understand the author's reasoning.

12. B - Placement can influence emphasis, but readers should not infer an author's position from sequence alone. Examining the explicit claim, evidence, counterarguments, and conclusion provides a stronger basis for identifying stance. Automatically equating first position with final position is unreliable, dismissing organization entirely is also mistaken, and relying on a photograph ignores the article's reasoning.

13. B - Effective feedback is specific, actionable, and connected to the learning goal. Asking the student to explain significance and relationships targets elaboration while preserving accurate evidence. Generic praise does not guide revision, unrelated details can weaken focus, and handwriting changes do not improve reasoning. The comment helps the writer move from listing facts to explaining a coherent idea.

14. D - Credibility depends partly on traceable authorship, evidence, publication context, and the ability to verify claims. A site that offers sweeping assertions without those supports deserves careful scrutiny. Headings are neutral design features, while identified sponsorship, dates, and links to original evidence make evaluation easier. Students should investigate provenance and evidence rather than judge by appearance alone.

15. A - Linear perspective creates an illusion of depth on a flat surface, often through converging lines, relative size, and placement. Overlap also helps signal spatial relationships. Texture concerns surface quality, symmetry concerns balanced arrangement, and monochromatic color refers to variations of one hue. Those elements may coexist in art, but they do not explain the described depth cues.

16. C - Texture describes how a surface feels or appears as if it would feel. A charcoal drawing can suggest bark, roughness, or softness through marks, while a photograph records visual surface information differently. Tempo, meter, and pitch are musical concepts. Cross-arts vocabulary should be precise so students can discuss how artists manipulate elements within each medium.

17. A - Crescendo is a dynamic marking directing performers to become gradually louder. It concerns volume over time, not tempo, pitch, or timbre. A slowing tempo would be indicated with terms such as *ritardando*, while pitch changes are written in the notes themselves. Understanding musical vocabulary helps students interpret notation and connect symbols with expressive performance choices.

18. C - In a canon, performers execute the same movement material with staggered entrances, creating layered repetition. Unison requires simultaneous performance, a solo centers one performer, and a freeze is a held position rather than a timing structure. Recognizing choreographic forms helps students describe how timing and repetition organize movement and create relationships among performers in space.

19. B - Cardiorespiratory endurance improves when the heart, lungs, and muscles repeatedly sustain aerobic work at an appropriate intensity and duration. Activities such as brisk walking, cycling, or swimming can provide that stimulus. A single maximal lift targets strength, flexibility work serves a different fitness component, and reading about exercise does not produce the physiological adaptation itself.

20. D - Heat safety depends on limiting excessive heat gain and replacing fluids before significant dehydration develops. Planned hydration, breathable clothing, rest, shade, and intensity adjustments reduce physiological strain. Heavy layers impede heat loss, waiting for severe thirst can delay needed fluids, and increasing intensity in extreme heat raises metabolic heat production. Students should also respond promptly to warning symptoms.

21. A - Adequate, consistent sleep supports attention, memory, mood, and physical health. A regular schedule with sufficient sleep opportunity and reduced late-night stimulation is more appropriate than relying on caffeine or chronic sleep restriction. Weekend catch-up may not fully offset persistent weekday deprivation, and bright screens near bedtime can interfere with routines that help the body prepare for sleep.

22. C - A healthy refusal skill is clear, respectful, and connected to a safer choice. Saying no, briefly explaining the safety concern, and proposing an alternative protects the student without escalating the interaction. Going along with pressure abandons the safety goal, silence does not communicate a boundary, and personal insults create conflict rather than supporting responsible decision making.

23. B - Handwashing with soap, water, and friction removes dirt, oils, and many microorganisms from the hands, reducing opportunities for them to reach food, the mouth, or other people. It lowers risk rather than guaranteeing perfect protection. The distractors incorrectly describe sterilization, body-temperature changes, or transformation of microbes instead of the practical mechanism of cleaning and removal.

24. B - Health literacy includes evaluating who made a claim, what evidence supports it, and whether trustworthy sources confirm it. Absolute promises such as 'cures every cold' deserve skepticism. Popularity, confidence, and polished graphics can appear in misinformation as easily as in accurate information. Verifying before sharing helps prevent unsupported health claims from spreading through a community.

25. D - Safety improves when students understand the movement, boundaries, equipment expectations, and progression before intensity increases. Modeling gives learners a visual reference, while controlled practice lets the teacher correct technique early. Beginning at maximum difficulty, improvising rules during crowded activity, or eliminating preparation can increase preventable risk. Instruction should match challenge to readiness and environment.

26. D - Flexibility work should be controlled and targeted to the muscle group being stretched. Moving into a comfortable end range and holding without bouncing reduces unnecessary strain while allowing gradual adaptation. Forceful ballistic stretching is inappropriate for general classroom use, upper-body work does not automatically lengthen hamstrings, and warming the body before deeper stretching can support safer movement.

27. C - Images can be authentic photographs yet still be miscaptioned, cropped, or reused from another event. Tracing provenance and comparing date, location, and reporting helps verify context. Likes measure engagement rather than truth, visual realism does not establish when or where a photograph was taken, and photographs can circulate widely with inaccurate descriptions. Verification should follow evidence.

28. A - Precise academic language names the process, condition, and observable result accurately. The correct sentence identifies condensation, cooling, and liquid droplets without vague or anthropomorphic wording. Phrases such as 'did a thing' hide the mechanism, while saying water 'likes' cold objects assigns human motives to matter. Technical vocabulary should clarify ideas rather than merely sound formal.

29. A - Digital presentations follow the same ethical principles of attribution as other academic work. Direct wording should be quoted or otherwise clearly identified, paraphrases still require credit, and sources should be traceable. Changing design does not change authorship, removing source information makes attribution worse, and presentation format does not create an exception to responsible use of others' work.

30. D - Stage directions provide information about actions, movement, expression, setting, or delivery that is not spoken as dialogue. The parenthetical instruction tells the actor what to do and how to speak. Footnotes document sources, rhyme schemes describe poetic sound patterns, and chapter headings organize prose. Reading drama requires interpreting both spoken lines and performance directions.

31. B - Shading geographic units according to a measured characteristic is a thematic mapping technique. Here, the changing shades help readers compare population density across counties and identify spatial patterns. Contour maps represent elevation, political maps emphasize boundaries, and route maps support navigation. Matching the map's visual encoding to its purpose is a core geographic-literacy skill.

32. C - Human geography examines how people, infrastructure, and places influence one another. A new transit connection can change accessibility, which may affect where housing, businesses, and pedestrian activity concentrate. The example does not prove identical experiences for all residents, and transportation does not directly create climate. The strongest conclusion stays within the evidence while recognizing spatial consequences.

- 33. C** - A prime number has exactly two positive factors, 1 and itself. Twenty-nine is divisible only by 1 and 29. The other choices are composite: 21 equals 3×7 , 27 equals 3×9 , and 39 equals 3×13 . Checking possible divisors up to the square root of 29 confirms the classification.
- 34. D** - A number between 0.4 and 0.5 must be greater than four tenths and less than five tenths. The decimal 0.46 meets both conditions. The value 0.39 is too small, while 0.54 and 0.56 are both too large. Comparing tenths first and then hundredths gives a reliable place-value method for locating the decimal between the benchmarks.
- 35. B** - To add fractions with unlike denominators, rewrite them with a common denominator. The least common denominator of 5 and 4 is 20: $\frac{3}{5}$ equals $\frac{12}{20}$ and $\frac{1}{4}$ equals $\frac{5}{20}$. Adding gives $\frac{17}{20}$. The distractors result from adding denominators, using incorrect equivalents, or stopping before combining the converted numerators. Checking the sum against benchmark one also confirms the result is reasonable.
- 36. A** - Equal sharing means divide 3.6 liters by 8. Rewriting 3.6 as 36 tenths gives 36 tenths divided by 8, which equals 4.5 tenths, or 0.45 liter. The distractors reflect misplaced decimals or multiplication instead of division. Multiplying 0.45 by 8 returns 3.6, providing a quick check on the quotient. This inverse-operation check confirms the sharing model.
- 37. C** - The factors common to 42 and 70 include 1, 2, 7, and 14, and no larger factor divides both numbers evenly. Therefore, 14 is the greatest common factor. Prime factorization also confirms this: 42 is $2 \times 3 \times 7$ and 70 is $2 \times 5 \times 7$, giving $2 \times 7 = 14$.
- 38. D** - Both 18 and 42 have a common factor of 6. Factoring 6 gives $18 + 42 = 6(3 + 7)$, which illustrates the distributive property in reverse. Expanding the expression returns $18 + 42$. The other choices either add rather than factor, use an incorrect common factor relationship, or produce a different total when evaluated.
- 39. B** - For a rectangle, area equals length times width. Dividing the area, 96 square centimeters, by the width, 8 centimeters, gives a length of 12 centimeters. Multiplication checks the result because 12 times 8 equals 96. The distractors come from repeating the width, dividing incorrectly, or using a value twice the required length.
- 40. D** - The interior angles of any quadrilateral sum to 360 degrees. The three known angles total $90 + 110 + 85 = 285$ degrees. Subtracting 285 from 360 gives 75 degrees. The distractors reflect arithmetic errors or failure to use the quadrilateral angle sum. Adding all four angles confirms that 75 completes the required 360-degree total.
- 41. A** - The radius is the distance from the center of a circle to its edge, while the diameter spans the circle through the center and equals two radii. Dividing the 18-centimeter diameter by 2 gives a radius of 9 centimeters. The other choices leave the diameter unchanged, double it, or incorrectly square a measurement.

- 42. C** - Experimental probability is the number of observed successes divided by the total number of trials. The target was reached 14 times in 40 trials, so the probability is $14/40$, which simplifies to $7/20$. The distractors halve only the numerator, use the number of failures, or invert the success-to-trial relationship. That matches the observed ratio.
- 43. A** - A bar graph can be used to combine category frequencies when the question asks for a total. Adding the four counts gives $6 + 9 + 5 + 10 = 30$ students. The other choices omit or miscombine one or more categories. Reading each bar accurately before adding prevents a common error in interpreting categorical data displays.
- 44. B** - Range measures the spread from the smallest to the largest value. The minimum height is 7 centimeters and the maximum is 11 centimeters, so the range is $11 - 7 = 4$ centimeters. Two is not the full spread, seven is the minimum itself, and nine is the mode. Range depends only on the two endpoints.
- 45. D** - A rotation is a rigid transformation, so it preserves distances and angle measures. The image is congruent to the original even though its location and direction may change around the center of rotation. Rotations do not double lengths, alter a triangle's angle sum, or automatically create a reflection. Congruence is the key invariant in this transformation.
- 46. C** - The points share the same x-coordinate, so the distance is entirely vertical. Their y-coordinates are 5 and -1. The absolute difference is $|5 - (-1)| = |6| = 6$ units. The distractors result from ignoring the negative sign or miscounting intervals. On a grid, moving from -1 to 5 requires six unit steps.
- 47. A** - Divide both sides of $4(n - 3) = 28$ by 4 to get $n - 3 = 7$. Adding 3 to both sides gives $n = 10$. Substitution verifies the solution: $4(10 - 3) = 4(7) = 28$. The distractors come from stopping after one step or applying the inverse operations incorrectly.
- 48. B** - The fixed starting fee contributes 4 dollars once, while the mileage charge contributes 2 dollars for each of m miles, or $2m$. Adding them gives $4 + 2m$. The distractors multiply the fee by miles or distribute the per-mile charge across the fixed fee incorrectly. Testing one mile gives 6 dollars, matching the correct expression.
- 49. B** - Twenty percent of 60 dollars is 0.20 times 60, or 12 dollars. A discount is subtracted from the original price, so $60 - 12 = 48$ dollars. Twelve is only the discount amount, 40 reflects an incorrect percentage reduction, and 72 adds the discount instead of subtracting it. Estimation confirms the price should be below 60.
- 50. A** - A unit rate expresses the amount for one unit. Dividing the total time, 12.5 minutes, by 5 laps gives 2.5 minutes per lap. Multiplying would find a different quantity, while subtracting the number of laps from the time has no rate meaning. The units minutes per lap also confirm that division is the appropriate operation.

51. C - Multiplication describes scaling as well as repeated whole-number addition. Multiplying by a factor between 0 and 1 scales a positive quantity downward, so $8 \times 1/2 = 4$ directly contradicts the student's overgeneralization. Comparing factors below, equal to, and above 1 helps build a transferable rule rather than replacing one memorized statement with another.

52. D - A triangle with two equal side lengths is isosceles, so sides 5, 5, and 8 meet that definition. It is not equilateral because the third side differs, and it is not scalene because two sides match. The triangle inequality also holds because $5 + 5 = 10$, which is greater than 8, so the triangle is possible.

53. A - Heating a solid increases the average kinetic energy of its particles. In a metal lattice, greater vibration can increase the average spacing slightly, producing thermal expansion without changing the substance into a new element. The particles do not stop moving or disappear. This particle model explains a macroscopic size change while preserving the material's identity.

54. D - Mass describes the amount of matter and does not substantially change when an object moves from Earth to the Moon. Weight is a gravitational force, so the weaker lunar gravitational field produces less weight. The Moon does have gravity, and changing location does not add or remove the rock's matter. Distinguishing mass from weight resolves the comparison.

55. C - Reflection occurs when light changes direction at a surface and returns to the original medium. For a smooth mirror, the angle of reflection equals the angle of incidence, measured from the normal. Refraction involves bending as light enters another medium, while light is neither destroyed nor universally converted to sound. The law of reflection predicts the outgoing direction.

56. B - A shadow forms when an opaque object blocks light from reaching a surface. Light from the flashlight continues traveling along available paths, but the book prevents much of it from reaching the region directly behind the object. Darkness is not a substance, magnetism is unrelated, and the flashlight continues emitting light even when part of its path is blocked.

57. C - Conduction and convection depend on matter. A vacuum contains very few particles, so there are far fewer particle collisions for conduction and no fluid circulation to sustain convection between the walls. Radiation can still cross a vacuum, so insulated bottles may also use reflective surfaces. The vacuum reduces important heat-transfer pathways rather than creating energy or blocking all radiation.

58. B - Stomata are microscopic openings, commonly in leaf surfaces, that open and close to regulate gas exchange and water loss. Carbon dioxide enters for photosynthesis, while oxygen and water vapor can leave through these pores. Petals primarily support reproduction by attracting pollinators, seeds contain developing plants, and root caps protect growing root tips rather than regulating leaf-atmosphere exchange.

59. D - During photosynthesis, plants use carbon dioxide and water to build energy-rich sugars, storing carbon in organic molecules while releasing oxygen. Combustion, respiration, and decomposition generally return carbon dioxide to the atmosphere rather than serving as the main process that removes it into newly produced plant biomass. The distinction connects energy flow with carbon cycling in ecosystems.

60. A - Sexual reproduction combines genetic material from two parents, and the alleles passed into each egg or sperm can differ. As a result, siblings may inherit different allele combinations and show genetic variation. This does not mean genes act alone in every trait, but the inherited combinations provide a central biological explanation for differences among siblings from the same parents.

61. D - Primary succession begins where a community must develop on a surface that lacks established soil, such as newly exposed bare rock. Pioneer organisms help contribute to soil formation over time. Regrowth after a fire with soil intact is usually secondary succession, while lawns and gardens already possess soil and biological legacies. The starting condition distinguishes primary from secondary succession.

62. A - Earth's axis is tilted relative to its orbit. As Earth travels around the Sun, the hemisphere tilted toward the Sun receives more direct rays and longer daylight, while the opposite hemisphere receives less direct rays and shorter daylight. Six months later the orientation is reversed. Seasonal patterns therefore result from axial tilt and orbit, not changing Earth-Sun distance.

63. C - A lunar eclipse occurs when the Moon moves through Earth's shadow, requiring Earth to lie between the Sun and Moon near a full-moon alignment. When the Moon lies between Earth and the Sun, a solar eclipse can occur instead. Venus and Mars do not control this geometry, and passing over a pole alone does not create an eclipse.

64. B - A barometer measures atmospheric pressure, making it useful for tracking changes associated with weather systems. A rain gauge measures precipitation, an anemometer measures wind speed, and a thermometer measures temperature. Weather investigations depend on matching each variable with an appropriate instrument. Combining several measurements can help students describe patterns and make evidence-based weather observations over time.

65. C - Deposition occurs when a transporting agent such as water loses energy and drops sediment. As a stream enters calmer lake water, its speed decreases and particles can settle. Weathering breaks material down, erosion transports it, and metamorphism changes rock under heat and pressure. The described settling is therefore the final placement stage of the sediment's movement.

66. D - Scratch tests compare mineral hardness, the resistance of a surface to being scratched. If a mineral scratches glass yet is scratched by quartz, its hardness lies between those reference materials. Luster concerns reflected light, streak concerns powder color, and cleavage concerns breakage patterns. Multiple properties are often combined when identifying an unknown mineral sample accurately.

67. A - Engineering design involves goals, criteria, and constraints. Limiting teams to one sheet creates a resource constraint, so students must make tradeoffs while seeking greater load capacity. A constraint does not guarantee identical designs or eliminate testing. Instead, it makes comparison meaningful because prototypes are evaluated under shared conditions. Measurement provides evidence for redesign and improvement.

68. B - Earth rotates from west to east, so places at different longitudes face the Sun at different times. Standard time zones organize those east-west differences into practical clock regions that often extend broadly north and south, with political adjustments. Latitude and elevation do not set local solar time, and the Moon does not determine the world's hourly civil-time pattern.

69. B - A hot, dry climate makes water availability and heat major environmental constraints. Water-efficient irrigation, storage, shade, insulation, and heat-adapted building choices respond directly to those conditions. Heavy-snow design fits cold snowy climates, tropical rainfall assumptions contradict low precipitation, and permafrost infrastructure belongs to much colder regions. Human adaptation reflects the opportunities and limits of place.

70. D - A river mouth with a protected harbor can connect inland transportation networks to maritime routes. That accessibility can support exchange, shipping, migration, and the development of commercial services. Geography creates opportunities rather than guarantees: ports can still face hazards, costs, and competition. The strongest geographic explanation identifies how transportation connections can contribute to urban and economic growth.

71. A - The Haudenosaunee, or Iroquois, Confederacy united multiple nations through shared political structures while member nations retained distinct identities. That makes it useful for examining cooperation, diplomacy, and governance across communities. It did not include every Indigenous nation, erase all local cultures, or operate as an institution of European colonial rule. Historical study should preserve political complexity.

72. C - At a fall line, rivers descend from higher to lower terrain, creating rapids and falls that historically could provide waterpower for mills. These locations also marked changes in navigation, encouraging transfer points and settlement. The physical feature did not guarantee identical economic conditions everywhere. The explanation connects natural geography to transportation and early industrial location decisions.

73. A - The Northwest Ordinance provided a framework for territorial government and a path toward statehood in the Northwest Territory. It helped define how the Confederation government would organize western expansion. It did not create a national income tax, restore the territory to Britain, or prohibit future states. The policy became an important precedent for incorporating new areas into the Union.

74. B - A state constitution is the foundational legal document for a state government. It typically establishes branches and offices, allocates state powers, and protects rights, while operating under the supremacy of the U.S. Constitution. It does not authorize states to disregard federal constitutional requirements, eliminate every other source of law, or function only as a historical artifact.

75. C - Committee hearings are one way Congress gathers information before making legislative decisions. Members can question witnesses, examine evidence, hear affected perspectives, and build a public record related to a proposal or oversight issue. Witnesses do not replace elected lawmakers, committees cannot amend the Constitution alone, and courts do not preapprove bills before congressional debate.

76. D - Due process centers on fair procedures when government institutions take actions that affect protected interests. Notice of the allegation and an opportunity to respond are basic procedural safeguards in school discipline. Secret accusations, decisions based only on rumor, or popularity-based punishment undermine fairness. The exact procedures can vary by context, but the keyed option best reflects the governing principle.

77. A - The Constitution requires an enumeration of the population, and census counts are used to apportion seats in the House of Representatives among the states. Census data also support many governmental decisions, but the count does not assign party membership, equalize household income, or replace elections. Understanding the census connects population data with representation in a representative system.

78. C - The War of 1812 grew from several disputes, including maritime restrictions, impressment of sailors, national honor, and frontier tensions involving British relations with Indigenous nations. The Constitution was not British law, the transcontinental railroad came much later, and France sold the Louisiana Territory to the United States before the war. Multiple causes shaped the conflict rather than one isolated event.

79. D - The Monroe Doctrine warned against new European colonization and intervention in the Western Hemisphere while also describing a policy of noninvolvement in certain European affairs. It did not return U.S. territory, invite unlimited colonization, or end all relations with Europe. The doctrine reflected growing U.S. concern about the political future of newly independent nations in the Americas.

80. B - Slave narratives and other firsthand accounts gave readers testimony about the violence, family separation, labor, resistance, and denial of freedom within slavery. Abolitionists used such evidence to challenge arguments that minimized or defended the institution. The narratives did not claim slavery had already vanished, promote its expansion, or avoid the subject. Their persuasive force often came from personal witness.

81. C - The early women's rights movement challenged legal and political inequalities and increasingly demanded voting rights, property rights, educational opportunity, and broader civic participation. Suffrage became a central goal. The movement did not seek to exclude women from education, abolish women's property rights, or create hereditary titles. Reformers argued for expanded rights rather than additional legal dependency.

82. A - Early textile mills brought machinery, power sources, capital, and wage labor together in centralized factories. Places such as Lowell became prominent examples of expanding industrial production and changing work patterns. They did not eliminate machinery or regional exchange. Their significance lies in how factory organization increased the scale of manufacturing and reshaped labor and community life.

83. D - Railroads compressed travel time, linked producers with distant markets, moved raw materials and finished goods, and supported migration and urban-industrial growth. They also contributed to major social and environmental changes. Rail travel was generally faster than wagon transport, supported rather than ended urbanization, and eventually encouraged greater coordination of schedules and standardized time across regions.

84. B - The Emancipation Proclamation declared freedom for enslaved people in designated areas under rebellion and shifted the Civil War's meaning by making emancipation a central Union objective. Its reach was limited, and nationwide abolition required the Thirteenth Amendment. It did not instantly end the war or establish universal suffrage. Its significance was military, legal, political, and moral.

85. C - The Morrill Act provided federal land grants to states to support colleges emphasizing agriculture, the mechanical arts, and other practical fields while also allowing broader studies. It expanded access to public higher education and helped build the land-grant college system. The law did not ban public colleges, require federal employment, or prohibit agricultural and technical education.

86. D - Black Codes were state and local laws that constrained the rights, movement, labor, and economic choices of African Americans after the Civil War. They reflected efforts to maintain white control despite formal emancipation and helped spur federal Reconstruction measures. They did not guarantee equality, distribute land universally, or function merely as infrastructure plans. Their significance lies in post-slavery racial restriction.

87. B - Populists drew support especially from farmers facing debt, transportation costs, and changing markets. They advocated reforms such as railroad regulation, monetary changes, and political reforms intended to reduce concentrated economic power. The movement did not seek monarchy, prohibit farmer organization, or reject every form of public regulation. Its program reflected conflicts over industrialization, credit, and democratic influence.

88. A - Industrial cities attracted many newcomers because factories and service work offered wage opportunities, transportation hubs linked regions, and existing communities could provide housing, information, religious institutions, and social networks. Immigrants were not universally required to live in cities, urban areas clearly offered employment, and ethnic communities often helped preserve culture rather than making cultural organization illegal.

89. C - Progressive reformers promoted direct primaries as a way to reduce the control of party organizations over nominations and give eligible party voters a more direct role in selecting candidates. The reform did not abolish elections, transfer appointments to corporations, or create hereditary office. It changed part of the nomination process before the general election.

90. A - Commercial radio expanded mass communication by sending the same programs to large audiences across wide areas. News, music, sports, entertainment, and advertising could circulate rapidly and contribute to shared popular culture. Radio did not immediately eliminate newspapers, require receivers to be wired directly to one building, or prevent audiences in different places from hearing common broadcasts.

91. B - The FDIC was created in 1933 amid banking crisis to insure qualifying deposits and help restore confidence in banks. Deposit insurance reduces the risk that covered depositors will lose insured funds when a bank fails. It does not guarantee stock-market gains, abolish private banking, or require households to invest savings in securities. Its central role concerns deposit protection and stability.

92. D - The Social Security Act created a federal system that included old-age benefits and other forms of social insurance. It responded to economic insecurity highlighted by the Great Depression. The program did not replace public schools, prohibit retirement, or guarantee stock prices. Its development marked an expanded federal role in providing a baseline of economic protection across the life cycle.

93. C - The GI Bill provided a range of benefits intended to help eligible veterans readjust to civilian life, including education and training opportunities, loan guarantees, and unemployment-related support. Access and implementation were not equally experienced by all veterans, especially under discriminatory local systems. Still, the law's central purpose was postwar readjustment rather than permanent service or exclusion from education.

94. B - The Marshall Plan provided large-scale U.S. economic assistance to support European recovery after World War II. Rebuilding production, infrastructure, and trade was intended to restore stability and reduce conditions that could fuel political extremism. The program did not place the United States under European occupation, block reconstruction, or replace the United Nations with direct American control of European governments.

95. D - In *Gideon v. Wainwright*, the Supreme Court held that the Sixth Amendment right to counsel applies to state felony prosecutions through the Fourteenth Amendment, requiring appointed counsel for defendants who cannot afford one. The ruling did not eliminate judges or juries, authorize denial of lawyers, or create a universal right to free counsel in every private civil dispute.

96. A - The Civil Rights Act of 1964 attacked legally enforced and institutional discrimination in public accommodations, employment, and other areas, using federal authority to strengthen civil rights protections. It did not mandate segregation, end elections, or require travel permits between states. The law was a landmark in the broader civil rights movement and expanded federal tools for enforcing equal treatment.

97. D - Watergate began with a break-in and expanded into investigations of political espionage, obstruction, and executive abuses. Congressional inquiries, court actions, and released recordings increased pressure, and President Richard Nixon resigned in 1974. The scandal did not create the Constitution, end the Civil War, or cause U.S. entry into World War I. Its legacy centers on accountability and presidential power.

98. C - A fixed expense generally stays the same for a defined period and is due on a predictable schedule. Monthly rent specified by a lease is therefore a typical fixed expense. Groceries, restaurant meals, and entertainment can change substantially with choices and circumstances. Classifying costs this way helps people plan budgets while recognizing that some expenses are less predictable than others.

99. B - With compounding, previously credited interest becomes part of the balance on which future interest may be calculated. This can make growth accelerate over time compared with simple interest using the same principal and rate. Compounding does not guarantee a fixed dollar gain, remove the principal, or ignore earlier interest. The account terms determine how often interest is compounded.

100. A - Interest is a payment associated with the use of money over time. Depositors provide funds that banks can use within the financial system, and the saver receives compensation according to account terms. Interest is not a punishment for saving, does not guarantee protection from inflation, and does not transfer ownership of the bank. Time, risk, and market conditions influence rates.