

SAMPLE TEST QUESTIONS AND FORMATTING

The Level 1 questions are multiple choice with 4 possible answers. You will be asked to mark your answer by darkening the circle corresponding with your answer number and letter on your answer sheet. You will be asked to write in the date, your I.D. number, and test card number on the test booklet(s) and answer sheets. **Do not write your name on the test booklet(s) or answer sheets.** The members of the Examination Board who grade the exam will not know to whom answer sheets belong.

The Level 2 questions are primarily multiple choice with 4 possible answers there may also be short answer questions. You will be asked to mark your answer by darkening the circle corresponding with your answer number and letter on your answer sheet. You will be asked to write in the date, your I.D. number, and test card number on the test booklet(s) and answer sheets. **Do not write your name on the test booklet(s) or answer sheets.** The members of the Examination Board who grade the exam will not know to whom answer sheets belong.

BASIC TEST TAKING PROCEDURES

Although not impossible, it is impractical to "study" or "cram" for this test. Your general knowledge should have been gained through many years of life and job experience. Your inspection knowledge should have been gained through on-the-job training; self-study with manuals, books and periodical articles; and with training seminars such as those sponsored by ACCT, CWA, ASTM, NAARSO, AIMS, manufacturers and others.

These helpful hints and tips are provided to aid you in taking the Inspector Certification Examination.

- Be certain to bring your eyeglasses if you need them for reading.
- Bring a watch to help you budget your time. Be certain you know the amount of time you have for the test.
- Arrive at the test site well before the scheduled time for the test.
- Refrain from drinking excessive amounts of liquid before the test. Going to the restroom during the test wastes valuable time.
- Do not bring any supplies with you. Pencils and scratch paper will be provided.
- Be confident and calm. A certain amount of anxiety is not only normal but is highly desirable.
- You will not be at your best if you are not relaxed. Check your watch and apportion your time intelligently. Give the test your complete attention. Concentrate solely on the task before you.
- Listen carefully to all oral instructions. Read carefully the directions for taking the test and marking the answer sheets. If you don't understand the instructions or directions, raise your hand and ask the proctor for clarification. Failure to follow instructions or misreading directions can only result in a loss of points.

When the signal is given to begin the test, start with the first question. Don't jump to conclusions. **CAREFULLY READ THE QUESTION AND ALL OF THE POSSIBLE ANSWERS BEFORE MAKING YOUR SELECTION.** Work steadily and quickly but not carelessly.

Do not spend too much time on any one question. If you can't figure out the answer in a few seconds, go on to the next question. If you skip a question, be sure to skip the answer space for that question on the answer sheet. Continue in this fashion through the test, answering only those questions that require little time and of which you are sure.

Make certain that the number of the question you are working on in the test booklet corresponds to the number of the question you are marking on the answer sheet. It is a good idea to check the numbers of the questions and answers frequently. If you skip a question but fail to skip the corresponding answer blank for that question, all your answers after that will be in the wrong place.

After you have answered every question you know, go back to the more difficult questions you skipped and attempt to answer them.

If time permits, recheck your answers for errors. If you find that your initial response is incorrect, change it to the correct answer, making sure to erase completely.

IF YOU MARK MORE THAN ONE ANSWER, THAT QUESTION WILL AUTOMATICALLY BE WRONG.

SAMPLE TEST QUESTIONS

Level 1

General Questions

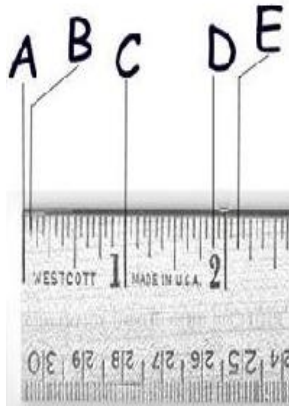
1. Which of the following is necessary for a contract to be enforceable?
 - a. The performance of the work or services must be legal in the applicable jurisdictions
 - b. An attorney must have written or reviewed the contract
 - c. All parties involved must be present at the time the contract is signed
 - d. All of the above
2. On completed construction projects, who is normally responsible for ensuring that the installation complies with the provided drawings and/or building codes during a commission inspection?
 - a. The contractor
 - b. The commissioning inspector
 - c. The architect or Engineer
 - d. B or C
3. Who is the BEST person to contact if the working drawings, blueprints or supplemental documentation are unclear during the process of inspection?
 - a. The element / ride owner
 - b. The local code enforcement officer
 - c. The local building inspector or zoning compliance officer
 - d. The Manufacturer of the structure being inspected
4. Which of the following best describes an insurance policy?
 - a. An agreement whereas the insurer guarantees that the contractor will not be sued by any party.
 - b. A policy that is in no way related to a contract to perform services
 - c. A contract under which the contractor/inspector agrees to perform a certain amount of work for a specified payment
 - d. A contract under which the underwriter promises to assume financial responsibility for a specified loss or liability incurred by the insured party.
5. $3/8$ " converted to a decimal fraction is:
 - a) .3333
 - b) .375
 - c) .398
 - d) .38
6. .25 converted to a fraction is:
 - a) $2/5$
 - b) $1/4$
 - c) $4/8$
 - d) $1/8$
7. A meter is a basic unit of length. A Kilometer is _____ meters
 - a) 10
 - b) 20
 - c) 100
 - d) 1,000

8. To convert Inches to Centimeters you would need to multiply the number of inches by _____?
- 0.394
 - 2.54
 - 0.348
 - None of the Above
9. 1 foot = how many centimeters?
- 12
 - 4.728
 - 30.48
 - 4.176

Use the Image Below to Identify the marks on this Imperial Ruler

10. B is?

- $1/32''$
- $1/16''$
- $1/4''$
- $7/8''$



11. D is?

- 1"
- $1-3/4''$
- $1-7/8''$
- $1-13/16''$

Use the Image Below to Identify the marks on this Metric Ruler

12. A is?

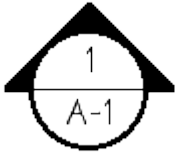
- 1cm
- 0 cm
- 0mm
- 0km

13. C is?


- 1.4cm
- 1.7cm
- 1.7mm
- 17mm

14. 1 yard = how many ft.
- 3
 - 4
 - 6
 - 2
15. What is the AREA of an object in square ft. with a width of 48" and a length of 96"?
- 72
 - 32
 - 16
 - 28
16. What is the perimeter of an object in feet where the width is 96" and the length is 96"?
- 28
 - 32
 - 142
 - 96
17. On a set of working drawings, a "section" or "cross section" of an object or structure would best be described as:
- The object or structure sliced into two parts with one part removed
 - The object or structure shown in a larger scale so as to provide greater detail.
 - A specific section of the object or structure shown separately
 - All of the above
18. A supplemental drawing used with a conventional working drawing that gives a complete and more exact description of the items in use is called the:
- Title Block
 - Detail Drawing
 - Schedule
 - Riser Diagram
19. A site plan is a plan view (as viewed from above) that shows
- Each level of the structure
 - Power riser diagrams
 - Cross sections of the structure
 - Property boundaries, buildings, roads, and elevation marks.
20. On a set of working drawings, where is the drawing scale most likely to be shown?
- In the symbols list
 - In the written specifications
 - In the fastener and attachment schedule
 - In the title block
21. A legend of symbols list is shown on construction drawings to:
- Describe materials, installation methods and scale being used on the drawings
 - Show the outline of the structures assembly steps
 - Identify all symbols used to indicate materials and coatings or finishing's
 - Enable the electrical service size to be calculated

22. If blueprints show fastener attachments why can't the contractor have just used the cheapest fasteners they could find?
- This is exactly what the builder should have done.
 - The written specifications may demand a specific grade or coated fastener as well as size to meet a standard, local building code and or corrosion resistance.
 - This would be a contract violation
 - Because blueprints do not specify cost
23. The bottom letter and number of the symbol below identifies what?



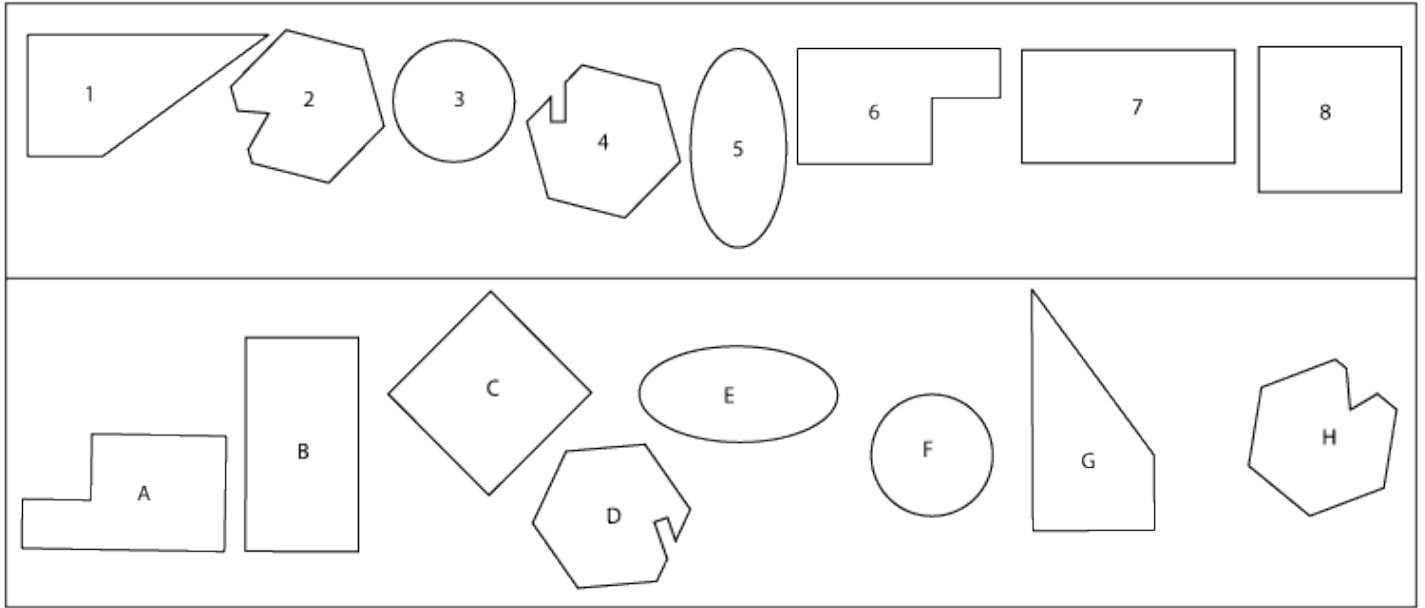
- South view drawing specification
 - North view sheet type
 - North view sheet type and sheet number
 - The part Identifier and quantity
24. The illustration below is called a?

 THE CF MARTIN ORGANISATION · NAZARETH, PA · 18064 ·		
TOLERANCES (EXCEPT AS NOTED)	TITLE · EXPLODED VIEW · D-45 · C.F.M.	
DECIMAL ± .005"	SCALE · FULL SIZE ·	DRAWING BY <i>dick boak</i>
FRACTION ± 1/64th"	DRAWING NO. · #11D45 ·	APPROVED BY 6/10 <i>J.W.G.</i> ✓
ANGLE ± 0°15'	PART NO. · 14 EXP 016 ·	DATE 6·13·77

- Title Block
 - Project Ledged
 - Revision schedule
 - Title legend
25. Which of these is meant to be tightened by hand
- Machine Screw
 - Wood Screw
 - Wing Nut
 - Bolt
26. Which of these typically does not require a tool to install
- Cotter Pins
 - Lynch Pins
 - Spring Pins
 - All of the above
27. Which tool below is **best** to tighten a bolt?
- Pliers
 - Chanel Locks
 - Vice Grip
 - Combination Wrench

28. What is the **best** tool for assessing that a 10' vertically oriented 2" x 4" is straight up and down?

- a. Ruler
- b. Level
- c. Square
- d. Plumb Bob



Using the above illustration please identify what numbered shape in the top row is the same as the shape with a letter in the bottom row.

29. 1=

- a. A
- b. C
- c. E
- d. G

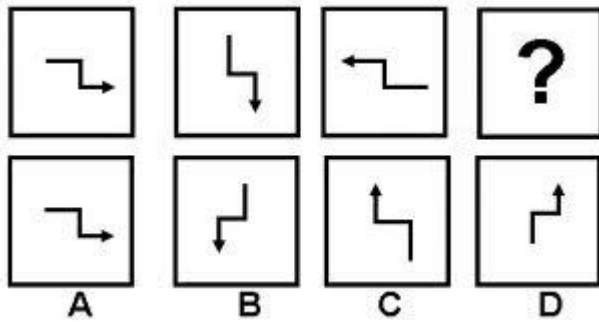
30. 4 =

- a. C
- b. D
- c. G
- d. H

31. 6=

- a. A
- b. E
- c. F
- d. G

32. Select the appropriate choice from the bottom row to complete the sequence in the top row.



- a. A
- b. B
- c. C
- d. D

33. A lockout tag is used to

- a) Identify a ride or element that shall not be used as assessed by in-house maintenance staff
- b) Identify a ride or element that shall not be used as assessed by a qualified third party inspector
- c) Shall not be removed until the issue causing the use of the lockout tag has been fixed and properly tested.
- d) All of the above

34. Personal Fall protection equipment shall be used by staff when

- a) Required by law
- b) Required by company policy
- c) When the employee is uncomfortable completing the task without the equipment.
- d) All of the above

35. Personal Fall Protection Equipment shall be inspected

- a) Daily before use
- b) Weekly
- c) Monthly
- d) Annually

36. Acceptable Fall Protection for an **Inspector** includes

- a) A railing 42" or higher
- b) A full body harness with appropriate lanyard
- c) A net below or installed as a perimeter around a work area
- d) All of the above

37. SAE is an identifying mark of a fastener that was made to what standard?

- a) Society of Automotive Engineers
- b) Society of Accredited Electricians
- c) Is not an acronym for an organization but a chemical grade for the metal used in the manufacturing of the component?
- d) None of the above

38. All SAE fasteners are marked, which of the following statements is **FALSE** about SAE fasteners

- a) Ink is used for the markings
- b) 3 lines for grade 5 fasteners
- c) 6 lines for grade 8 fasteners
- d) Provide a visual identifier that lets inspectors know the anticipated strength of the fastener

39. Metric Fasteners have a number on the head such as 8.8 or 12.9. This mark?
- Identifies the size of the fastener
 - Identifies the strength of the fastener
 - Identifies the material of the fastener
 - None of the above.
40. Tensile Strength can best be described as?
- The angled force that a component can withstand before breaking
 - The force applied in-line to pull a component to the point it breaks.
 - The shear force that a component can withstand before breaking
 - The opposite of compressive force
41. Torque is NOT defined as?
- The tendency of a force to cause rotation
 - Wrench tight
 - measured in Ft. Pounds or Newton Meters
 - a specification provided by a fastener manufacturer for best performance of product
42. Heat Treatment?
- Is a process used to alter the physical and/or chemical properties of a material
 - Can relieve internal stresses and refine structures to improve their cold working properties
 - A process that toughens a metallic piece
 - All of the above
43. Welding is NOT defined as?
- The melting of a lower-melting point material between two work pieces to form a bond between them.
 - A fabrication process that joins materials by melting two or more work pieces and adding filler material to form a molten material that cools to become a strong joint.
 - Something if required by an engineer, can just be swapped out for a few bolts in a pinch
 - A process that requires inspection of critical components to ensure it was completed correctly before being put into service and at regular intervals once in service.
44. Which is a NOT a type of Non-Destructive Testing?
- A visual weld inspection that looks for abnormalities in materials
 - A Magnet used to detect surface defects on ferrous materials
 - The use of a Tension meter to check wire rope tension
 - Pulling a component to failure to determine its ultimate strength
45. The components of wire rope include?
- Core
 - Strand
 - Wire
 - All of the above
46. Examples of damage to wire rope that would compromise its ability to function appropriately include
- Kinking or kink
 - Bird caging
 - Excessive corrosion
 - All of the above
47. When inspecting a wire rope lifeline where the crown surface wires are worn by 1/3 or more of the original diameter the cable shall fail inspection.
- True
 - False

48. If there are 114 wires in 3/8" 7x19 GAC and the breaking strength is listed by the manufacturer as 14,400 lbs. and one **strand** of wires is completely broken what is the estimated breaking strength of the wire rope in service?
- 9,886 Lbs.
 - 10,286 Lbs.
 - 12,342 Lbs.
 - 7,800 Lbs.
49. ANSI B77.1 is a standard that deals with
- The design of welded components
 - The design manufacture and maintenance of passenger transportation systems that use cables, ropes or other flexible elements that is frequently referenced for commercial zip lines in state amusement codes.
 - The design manufacture and maintenance of gas and electric powered amusement rides
 - None of the above
50. The ASTM collection of standards for amusement rides is frequently referred to as the
- A-2291 Standards
 - F-24 Standards
 - AWS-15 Standards
 - ANSI 620 standards
51. NFPA is an acronym for the
- The National Fall Protection Association
 - The National Fire Protection Association
 - The National Fastener Production Association
 - None of the Above
52. When Performing an inspection on a new structure, ride or system the inspector should
- Review the manufacturers manuals and support documentation prior to starting the inspection
 - Schedule enough time to properly inspect the structure and related components
 - Document all deficiencies identified
 - All of the above
53. All new installations shall comply with what version of the ANSI/ACCT Standard
- 4th Edition
 - 6th Edition
 - 7th Edition
 - The current Published Edition at the time of installation
54. Which of the following is the manufacturer **NOT** required to provide under ACCT standards to the client upon completion of installation and before use or commissioning inspection.
- Normal Operational Limitations for the structures, elements or rides
 - Operational Instructions and Participant safety briefing Instructions or Policies
 - Name of all employees that worked on the design and construction of the new element or project
 - Maintenance, Inspection and equipment replacement schedules and criteria
55. Major modifications to an existing course shall be completed to :
- The version of the ANSI/ACCT standards published at the time of original installation
 - The version of the ANSI/ACCT standards in affect at the time of the major modification
 - The version of the ANSI/ACCT standards that a qualified person determines can be used
 - The version of the ANSI/ACCT standards that a competent person determines can be used.

56. An Acceptance Inspection can be completed by
- A qualified manufacturer's representative
 - A qualified third party inspector
 - Either a or b
 - Neither a or b
57. Inspections conducted to ANSI/ACCT standards must include
- A visual and physical inspection of low elements, high elements and associated life support equipment.
 - Climbing to inspect components at height when safe and accessible to the inspector
 - Consultation with third parties if parts of inspection are outside of the inspectors qualifications.
 - All of the above
58. Required information within written inspection reports shall include:
- Inspection date
 - Name of inspection company
 - Name of inspector(s)
 - All of the above
59. Required information in the written inspection reports shall include:
- Course installation history (dates and company names) if available
 - Previous inspection history (dates and company names) if available
 - A list of activities or elements inspected
 - All of the above
60. Required information in the written inspection report shall include:
- A list of related challenge course structures seen by the inspector but not inspected
 - A list of all structures seen and inspected by the inspector.
 - A list of all programming equipment used to operate the challenge course structure.
 - All of the Above.
61. Required information in the inspection reports shall include:
- Name of Inspection Body
 - Name of Inspector(s)
 - Date of Inspection
 - All of the above.
62. One item not required in the inspection report is:
- Identification of items that do not pass current industry standards
 - Identification of items that will require monitoring or repair within 12 months of inspection
 - Identification of missing documents or manuals
 - Identification of costs to repair damaged components or replace missing documents
63. Before a project is commissioned for use, **it must** according to ANSI/ACCT standards
- Be inspected by the installer or qualified third party
 - Be inspected by a competent person
 - Be inspected by the clients facility manager
 - Be inspected by the project investor
64. **Newly Installed** Critical Guy anchors need to be properly designed and stamped by a licensed engineer or proof tested to a minimum of _____ the expected load.
- 1x
 - 2x
 - 3x
 - 5x

65. Guy anchors on older structures that were installed to previous versions of the ACCT standards and have a reliable performance history.
- Need to be replaced with new anchors and proof tested
 - May be passed by the qualified inspector pending their review of structure and supplemental documentation if required
 - Shall be backed up with a redundant, newly installed anchor
 - Shall be removed and the same anchor re-installed to the current version of the ANSI/ACCT standards.
66. The dead load on a structure is defined as the
- Weight of the object in motion
 - Force of the object at the bottom of its fall
 - Relatively constant static forces on a structure due to the weight of construction materials, equipment or components.
 - All of the above
67. The Live Load can be defined as
- The effects of wind and snow on a structure
 - The temporary short, duration or moving loads, including all variable forces within a structure
 - The people on a challenge course
 - All of the above.
68. Of the following, what would qualify as Minor Modifications to an existing installation?
- Addition of a second belay cable to an element that previously only had one.
 - Replacement of existing belay cable due to oxidation, with identical materials, installed in the same manner and placement as the cable removed.
 - Addition of a new platform, deck, guardrails and or gates
 - Addition of a zip line landing platform
69. According the ANSI/ACCT standards, training must be undertaken at least
- Monthly
 - Quarterly
 - Annually
 - Whenever the facility manger deems necessary
70. Professional Inspections are required annually at minimum.
- True
 - False
71. Climbing to inspect equipment and components shall be done when safe and accessible to an inspector.
- True
 - False
72. Which of the following **might not be considered** a Hazard?
- Deadfall over element, live bees nests under platform, no evidence of training.
 - Operation of course in winds under 15 mph, light rain, or sunny conditions
 - Lighting damage to course, vandalism to structure, insufficient light to operate.
 - No access limitation, inappropriate fall protection equipment and 30" railing heights.
73. The Inspector shall immediately notify the owner when element(s) and/or equipment fail inspection.
- True
 - False

74. In the absence of other supporting information, inspectors may deem verification necessary to properly assess the strength and suitability of the design. Other supporting information may include:
- Load measurement
 - Non-destructive testing
 - Previously compliant installation under an older standard with a positive performance history
 - All the above
75. The Owner/Operator shall maintain written records, such as Participant Release/Medical Forms, Staff Training evaluation records, etc. for a period of time:
- Based on legal counsel
 - Based on Internal company policies for record keeping
 - consistent with state and local statute of limitation laws
 - all of the above
76. Identify three items that shall be included in a professional inspection
- Visual and physical inspection of elements, climbing to inspect elements, verification of strength and suitability of design
 - Improper use of elements or equipment based upon physical condition, immediately notify owner upon any failure of critical items, torque all cable clamps
 - Ensure that owner has completed report prior to leaving site, climbing to inspect elements, proof test all critical bolts
 - None of the above
77. Tree inspection and evaluation shall be conducted by a qualified person that looks at weak branch unions, health and structural impact due to defects, lightning damage, and disease.
- True
 - False
78. Wood poles used as critical element support structures shall comply with prevailing editions:
- American National Standard for Wood Products (ANSI 05.1 and 05.2)
 - NFPA Standard 345.2
 - ASTM standard F24-747
 - All of the above
79. Which of the following **are true** statements regarding fastener placement for critical components on wood poles:
- Components that penetrate the pole shall be at least 8" from the top of the poles unless the poles is properly capped or otherwise treated
 - Components that penetrate the pole shall be at least 10" from the top of the poles unless the poles is properly capped or otherwise treated
 - Components that penetrate the pole shall be at least 12" from the top of the poles unless the poles is properly capped or otherwise treated
 - Components that penetrate the pole shall be at least 14" from the top of the poles unless the poles is properly capped or otherwise treated

Which of the following are actual requirements for verifying life safety system integrity, as specified in the ANSI/ACCT Standards?

- a. Proof testing, redundancy, soil boring
- b. Presence of a redundant system, system meets or exceeds a verifiable life safety standard, system is proof tested or engineered.
- c. System is reachable by hand for participants, redundant in nature, and always corrosion resistant
- d. A hazard analysis has been completed and is on file, the system exceeds NFPA standards and/or has been proof tested

80. Newly Installed lifeline systems that are not engineered shall comply with the following:

- a. Allow for the Inspection along the entire length of the lifeline system
- b. Be accompanied by the designers, manufacturers and or inspectors criteria for future routine maintenance
- c. Be accompanied by the lifeline rope material manufacturer's inspection and test certification or documentation.
- d. All of the above.



1.



2.



3.



4.

81. Using the illustration above what number is a U-Bolt cable wire rope clamp

- a. 1.
- b. 2.
- c. 3.
- d. 4.

82. Using the illustration above what number is a twin base saddle clamp

- a. 1.
- b. 2.
- c. 3.
- d. 4.

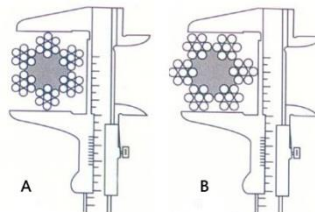
83. Using the above illustration above what number is an automatic deadend

- a. 1.
- b. 2.
- c. 3.
- d. 4.

84. Using the above illustration what number is a swage sleeve

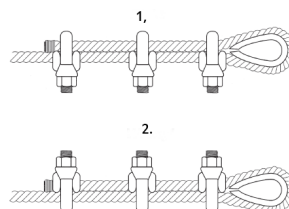
- a. 1.
- b. 2.
- c. 3.
- d. 4.

85. When inspecting a platform, or elevated deck, an inspector shall consider
- Fasteners used
 - Type of wood, wood treatment and rot
 - Cracking, checking or deformities
 - All of the above
86. While ACCT standards specify minimum standards for participant equipment; what standard shall be used for employees performing professional inspections on a course or structure?
- NFPA
 - OSHA
 - The standard required by law for employees working at height in the country, state, provinces or otherwise having legal jurisdiction.
 - The use of the same equipment as the course participants (seat harness, lanyard, manual locking carabiner, etc.) are acceptable for the inspector to wear.
87. When inspecting a harness which of the below shall be inspected for.
- Age of harness
 - Wear of webbing or material
 - Proper functioning buckles or locking system
 - All of the above.
88. Carabiners and/or snap hooks shall be inspected for
- Corrosion
 - Properly operating gate and/or locking mechanism
 - Minimum strength requirement marked on component
 - All of the above
89. When performing inspections the inspecting body has a duty to do which of the following:
- Understand the local codes, regulations or laws for inspections of the structures or systems they wish to inspect.
 - If licensing with the regulatory body is required the inspection body shall register with the proper legal authority, send only qualified inspectors that meet the written standard and perform all services in compliance with the code or law if they wish their inspection to be legally binding.
 - May simply travel from region to region and comply with ACCT standards and be confident that is sufficient.
 - A and B only
90. Which illustration demonstrates the correct way to measure the diameter of wire rope with a caliper?
- A
 - B
 - Neither
 - Both



91. Which of the following illustrations demonstrates the proper orientation of U-clamps (wire rope clips).

- 1.
- 2.
- Neither
- Both

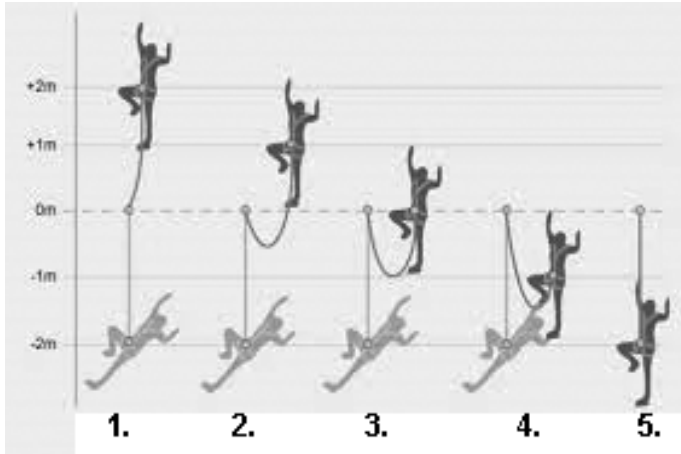


92. The following illustration can best be described as?

- a. Kink
- b. Birdcage
- c. Rouge
- d. Peening



USE THE FOLLOWING IMAGE FOR QUESTIONS 93 AND 94

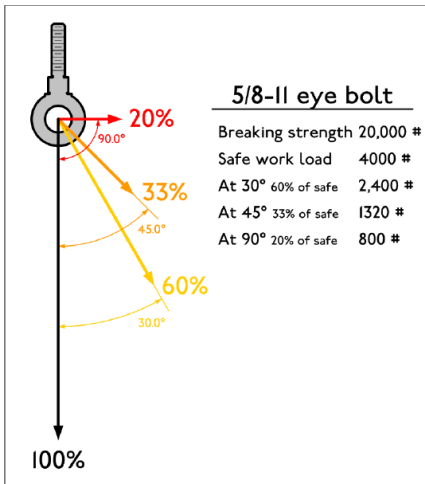


93. Identify the fall factor of 0.

- a) 2.
- b) 3.
- c) 4.
- d) 5.

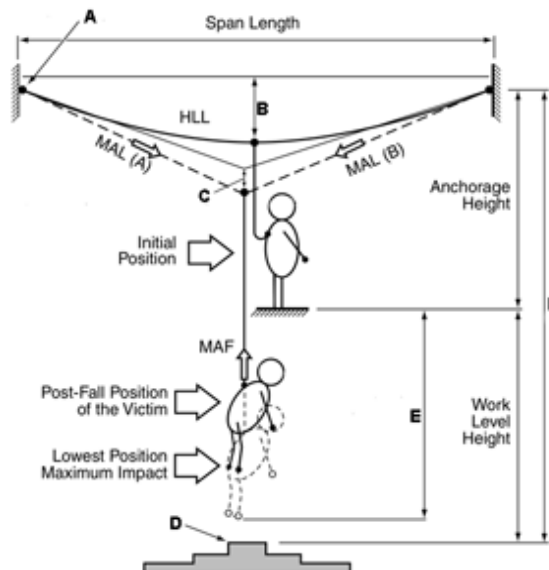
94. Identify the fall factor of 2.

- a) 1.
- b) 2.
- c) 3.
- d) 5.



95. If the bolt pictured above has a **safe working load** of 20,000 lbs when the force is applied in-line (100%). What would be the reduced working load limit when the force is applied at a 90 degree angle?
- 800 lbs
 - 2400 lbs
 - 4,000 lbs
 - 6,000 lbs

USE THE FOLLOWING ILLUSTRATION TO ANSWER QUESTIONS 96 THROUGH 97



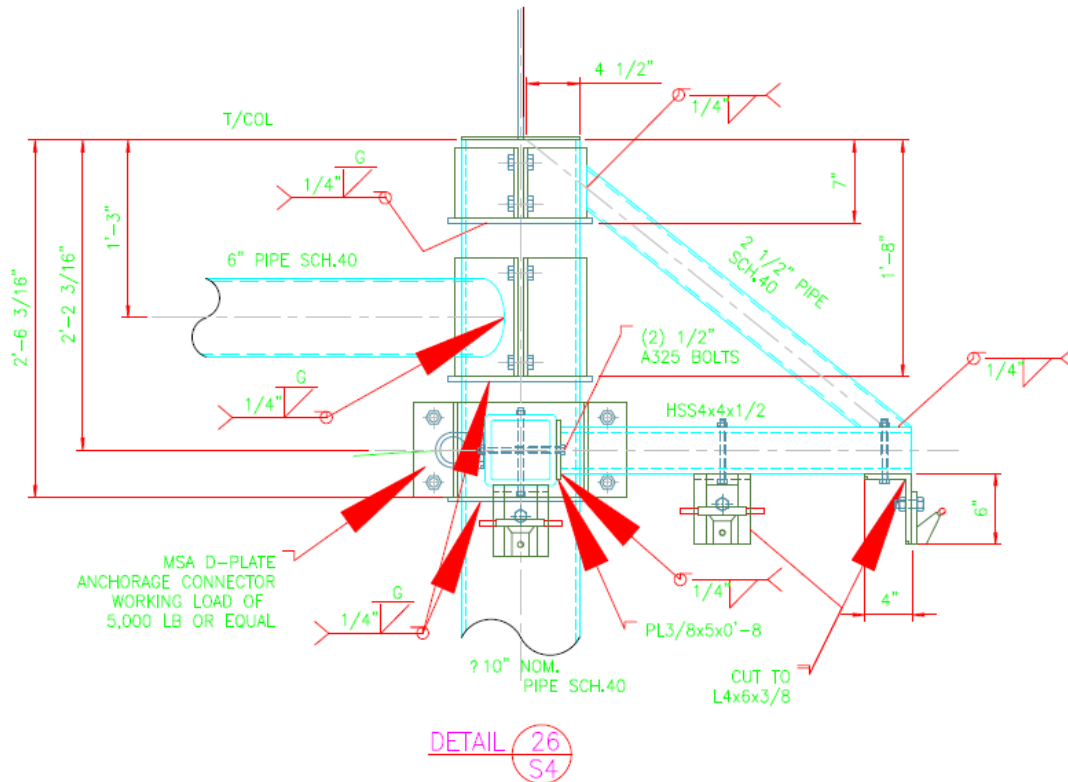
96. **A** best illustrates:
- Initial sag
 - Anchorage
 - Point of initial dynamic force
 - MAD
97. **B** best illustrates:
- Anchorage point
 - Sheer reduction device
 - Initial sag
 - $HLL \times MAL(A) + MAF$

LEVEL II SAMPLE TEST

1. You have a piece of wood 2' long x 2" wide. You need to rip that piece into smaller parts $\frac{1}{2}$ " wide by 2' long. How many $\frac{1}{2}$ " strips can you get out of the 2' x 2" piece?
 - a. 2
 - b. 3
 - c. 4
 - d. 6
2. A 12-foot long class IV pole wood pole can hold a uniform load of 420 pounds per ft.; what total load can the beam support?
 - a. 4,200 lbs.
 - b. 4,060 lbs.
 - c. 5,040 lbs.
 - d. 5,000 lbs.
3. The above wood pole (or beam) is used to support a deck at 120lbs per linear foot, plus a railing structure at 45 pounds per linear foot. What total dead load will the beam have to support? Is the beam safe to use to support the deck and railing allowing for the addition of live loads?
 - a. 2,400 pounds: the beam is safe
 - b. 1,980 pounds: the beam is safe
 - c. 4,200 pounds: the beam is not safe
 - d. 5,300 pounds: the beam is not safe
4. If the breaking strength of a forged bolt is 10,000 lbs. and we want to proof test the bolt to 20% of the breaking strength, how many **tons** of force would need to be applied?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
5. In the question above, what is the estimated minimum factor of safety?
 - a. 2:1
 - b. 3:1
 - c. 5:1
 - d. 10:1
6. Which of the following best describes a sectional drawing?
 - a. A cutaway view of an object or structure
 - b. A drawing as if the object were viewed from above
 - c. A drawing of an object as if viewed directly from the front
 - d. A drawing of an object if viewed from one side.
7. Elevations shown on a site plan refer to:
 - a. The side view of the structure
 - b. Horizontal distances between utility poles
 - c. Vertical height above or below a given reference point or bench mark
 - d. The dimensions of the walking paths
8. Site contours are:
 - a. Locations of buried utilities
 - b. Continuous grade lines that show the height above or below a given reference point
 - c. Dimensions that are used to locate a building on a given site
 - d. Dimensions that define site boundaries

9. A perspective drawing (three dimensional view):
 - a. Can be scaled for precise estimation of size
 - b. Cannot be scaled
 - c. Can be substituted for building elevations
 - d. Can be measured and scaled to determine all material sizes
10. An installation can vary from the ACCT or ASTM standards as long as it has been stamped by a structural engineer and testing to the ASTM standards of those provided by the engineer have been completed and are properly documented
 - a. True
 - b. False

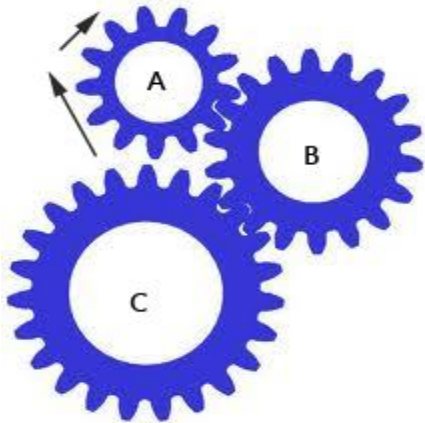
USE THE IMAGE BELOW TO ANSWER QUESTIONS 11 THROUGH 14



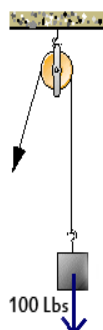
11. Identify the bead size of the welds required for proper fabrication
 - a. PL3/8
 - b. 1/4"
 - c. Weld thicknesses are not specified
 - d. HSS4x4
12. Using the above illustration please identify the bolt size specified for attaching the D Plate Anchor Connector:
 - a. 3/8" x 5"
 - b. 4" x 4-1/2"
 - c. 1/2" A 325
 - d. 4"
13. Three pipe sizes are identified in the above drawing they are?
 - a. 10" schedule 40; HSS 4x4x1/2; and 2-1/2" schedule 40
 - b. 10" schedule 40; PL 3/8"x5; and HSS 4x4x12
 - c. 2-1/2" schedule 40; 10" schedule 40; and 6" schedule 40
 - d. More than three pipe sizes are specified.

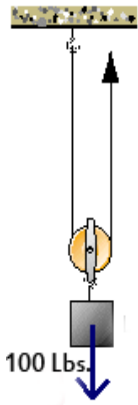
14. For a smaller view of the detail shown above incorporated into the larger structure you should reference?
- A325
 - Sheet 4
 - Page 26
 - The manufactures operations manual

USE THE ILLUSTRATION BELOW FOR QUESTIONS 15 THROUGH 17



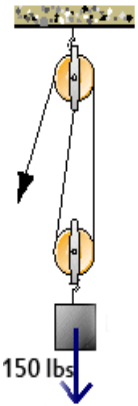
15. If wheel A turns Clockwise what direction does wheels B and C turn
- B is clockwise and C is counterclockwise
 - B is counterclockwise and C is counterclockwise
 - B is counterclockwise and C is clockwise
 - None of the above
16. If wheel C turns at 40 rotations per minute, **approximately** how fast will wheel A turn?
- 60 rotations per minute
 - 80 rotations per minute
 - 20 rotations per minute
 - 40 rotations per minute
17. Which Gear will have the fewest Rotations Per Minute (RPM)
- A
 - B
 - C
 - All turn at the same speed
18. If an additional gear were installed directly south and underneath gear C, regardless of its size it would turn
- Clockwise
 - Counter clockwise
19. To lift the 100 lb. weight illustrated below, you need to pull with a force of about _____ pounds.
- 25
 - 50
 - 75
 - 100





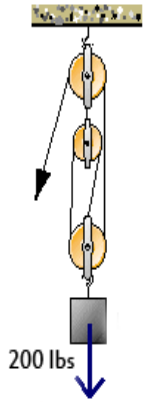
20. To lift the 100 lb. weight illustrated above, you need to pull up with a force of about _____ pounds.

- a. 25
- b. 50
- c. 75
- d. 100



21. To lift the 150 lb. weight illustrated above, you need to pull down with a force of about _____ pounds.

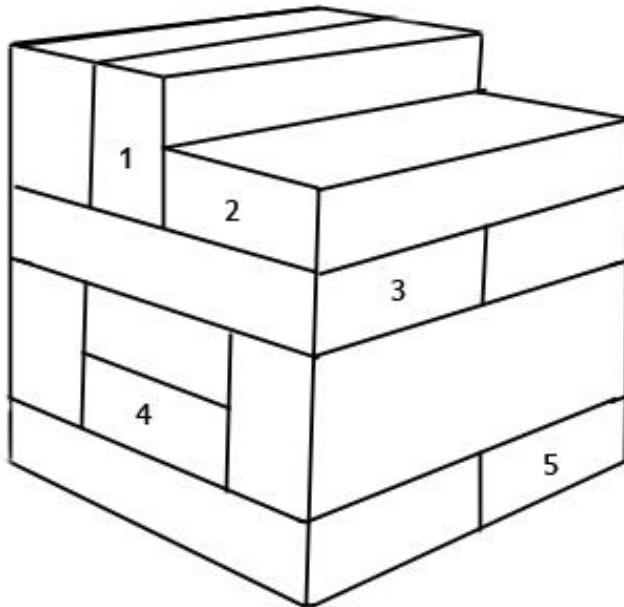
- a. 50
- b. 75
- c. 100
- d. 150



22. To lift the 200 lb. weight illustrated above, you need to pull down with an approximate force of about _____ pounds.
- a. 49
 - b. 67
 - c. 112
 - d. 200
23. **Of the choices listed below** – The heaviest weight shown that a $\frac{1}{4}$ Ton Chain Hoist could lift would be?
- a. 294 lb.
 - b. 482 lb.
 - c. 524 lbs.
 - d. 600 lbs.

USE THE ILLUSTRATION BELOW FOR QUESTIONS 24 THROUGH 26

24. Using the illustration below, assuming all blocks are the same size – please answer the question. How many blocks are touching the block labeled #3



- a. 1
- b. 3
- c. 4
- d. 7
- e. 5

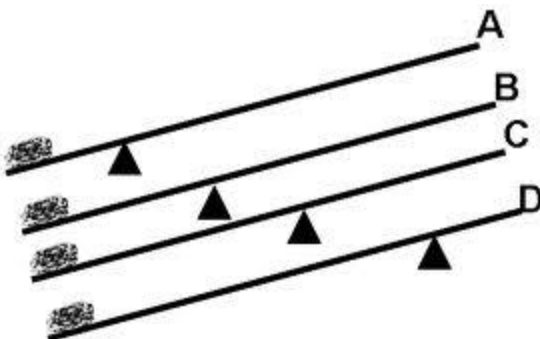
25. Using the above illustration – please identify how many blocks are touching the block labeled #4

- a. 3
- b. 4
- c. 5
- d. 6

26. Using the above illustration – please identify how many blocks are touching the block labeled #5

- a. 7
- b. 6
- c. 5
- d. 4

27. Which lever shown below has the greatest mechanical advantage?



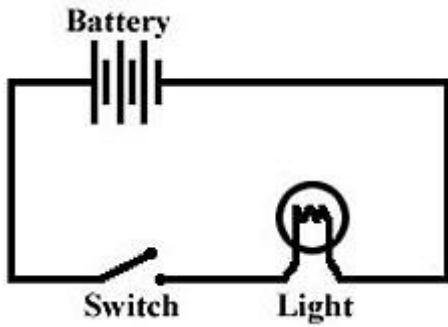
- a. A
- b. B
- c. C
- d. D

28. The electrical symbol below is called a?



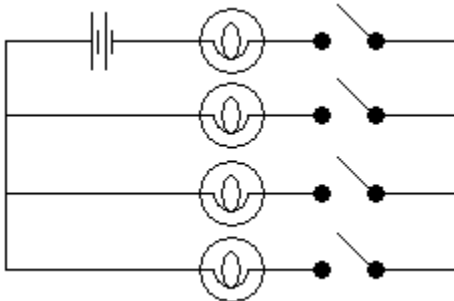
- a. Coil
- b. Fuse
- c. Switch
- d. Resistor

29. In the below illustration is the light turned on or off



- a. On
- b. Off

30. In the circuit shown, how many switches need to be closed to light up one bulb?



- a. None
- b. One
- c. Two
- d. Four

31. The below illustration from a hydraulic /pneumatic assembly can best be described as?



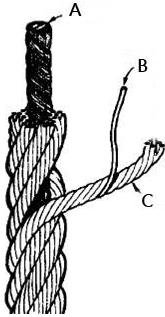
- a. Check valve
- b. Open Switch
- c. Hydraulic Cylinder
- d. Control Valve

32. The illustration below from a hydraulic /pneumatic assembly can best be described as?



- a. Control Valve
 - b. Bleeder
 - c. Shut off Valve
 - d. Check Valve
33. Which type of Fire Extinguisher should never be used on an oil fire.
- a. Dry Chemical
 - b. Water
 - c. Carbon Dioxide
 - d. None of the Above
34. When inspecting a fire extinguisher what should be inspected?
- a. Rust on Extinguisher body
 - b. Expiration date on tag
 - c. Safety pin is in place
 - d. All of the above
35. A drop forged Casting is best defined as
- a. The process by which a liquid material is introduced into a mold and allowed to solidify and then pushed out once solid as a completed part.
 - b. The process of heating and bending a pre-manufactured product into a new shape
 - c. Stronger than a malleable component
 - d. A & C
36. Drawing, during the manufacturing of a component is best defined as?
- a. The process of sketching a concept.
 - b. A manufacturing process for producing wire, bar or tube by pulling on material until it increases in length.
 - c. A manufacturing process where material is pushed down through a die of a desired shape.
 - d. A manufacturing process where material is heated and bent into a new desired shape.
37. Extrusion, during the manufacturing of a component is best defined as?
- a. A manufacturing process where material is heated and bent into a new desired shape.
 - b. A manufacturing process where material is pushed down through a die of a desired shape.
 - c. A manufacturing process for producing wire, bar or tube by pulling on material until it increases in length.
 - d. None of the above
38. Hydraulic / pneumatic Systems
- a. Use air pressure to do work.
 - b. Use fluid power to do work
 - c. Use a combination of air and fluid power to do work
 - d. None of the above
39. Which of the following is **not** a typical part of an electric circuit
- a. Power source
 - b. Conductor
 - c. Load
 - d. Fillet

e. USE THE IMAGE BELOW FOR QUESTIONS 40-42



40. In the above illustration A is

- a. Wire
- b. Core
- c. Strand
- d. Bridle

41. In the above illustration B is

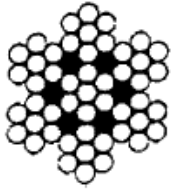
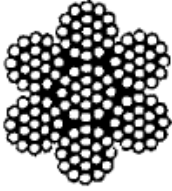
- a. Core
- b. Wire
- c. Strand
- d. Fillet

42. In the above illustration C is

- a. Strand
- b. Wire
- c. Bridle
- d. Fillet

USE THE IMAGE BELOW FOR QUESTIONS 43 AND 44

TABLE 9 Classification 7x7 and 7x19 Small Diameter (Galvanized) Specialty Cord

Cross Section Examples	Construction of Rope		Construction of Strand								
	Item	Quantity	Item	Quantity							
 <p>7x7</p>	Strands ^A	7	Wires	7 or 19							
	Outer Strands	6	Outer Wires	6 or 12							
	Layer of Strands	2	Layer of Wires	1 or 2							
	Wires in Rope ^A (excluding core strand)	42 or 114									
 <p>7x19</p>	Typical Examples		Number of Outer Wires								
	Rope	Strand	Total	Per Strand							
	3x7	1-6	18	6							
	7x7	1-6	36	6							
7x19	1-6/12	72	12								
Diameter	Approx. Mass				Minimum Breaking Force ^A				Diameter Range		
	in.	[mm]	7x7		7x19		7x7		7x19		Min.
		lb/100 ft	[kg/30.5 m]	lb/100 ft	[kg/30.5 m]	lbs	[kN]	lbs	[kN]	in.	in.
1/32 ^A	0.79	0.16	0.07			110	0.49			0.031	0.037
3/64	1.19	0.42	0.19			270	1.2			0.047	0.055
1/16	1.59	0.75	0.34	0.75	0.34	480	2.1	480	2.1	0.063	0.073
5/64	1.98	1.1	0.50			650	2.9			0.078	0.089
3/32	2.38	1.6	0.73	1.7	0.77	920	4.1	1000	4.4	0.094	0.106
7/64	2.78	2.2	1.0			1260	5.6			0.109	0.122
1/8	3.18	2.8	1.3	2.9	1.3	1700	7.6	2000	8.9	0.125	0.139
5/32	3.97	4.3	2.0	4.5	2.0	2600	11.6	2800	12.5	0.156	0.172
3/16	4.76	6.2	2.8	6.5	3.0	3700	16.5	4200	18.7	0.188	0.206
7/32	5.56	8.3	3.8	8.6	3.9	4800	21.4	5600	24.9	0.219	0.237
1/4	6.35	10.6	4.8	11.0	5.0	6100	27.1	7000	31.1	0.250	0.268
9/32	7.14	13.4	6.1	13.9	6.3	7600	33.8	8000	35.6	0.281	0.301
5/16	7.94	16.7	7.6	17.3	7.9	9200	40.9	9800	43.6	0.313	0.335
11/32	8.73	20.1	9.1	20.7	9.4	11 100	49.4	12 500	55.6	0.344	0.368
3/8	9.53	23.6	10.7	24.3	11.0	13 100	58.3	14 400	64.1	0.375	0.401

^A 1/32 construction is 3x7.

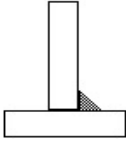
43. Use the chart above to identify the weight per 100 ft. of 3/8" 7x 19 GAC
 - a. 10.7 lbs.
 - b. 23.6 lbs.
 - c. 24.3 lbs.
 - d. 11 lbs.
44. Using the above illustration identify the minimum breaking strength of 1/4" 7x19 GAC (round to nearest whole number)
 - a. 6.35
 - b. 7,000
 - c. 6,100
 - d. None of the above.
45. If 5/16" 7x7 wire rope has a minimum breaking strength of 9,200 lbs. and two wires are broken what is the new minimum breaking strength for the wire rope (round to the nearest whole number)
 - a. 8824 lbs.
 - b. 7237 lbs.
 - c. 8832 lbs.
 - d. 7680 lbs.

46. The ASTM Standard Practice for Design of Amusement Rides and Devices is
- 853
 - 770
 - 2291
 - 747
47. The ASTM Standard Specification for Physical Information to be provided for Amusement Rides and Devices is
- 846
 - 2291
 - 698
 - 747
48. According to ASTM F1159 railings shall be
- At least 42" above the walking surface
 - Shall be constructed to reject a 4" ball from being able to pass through it at any section or cross section
 - Shall be designed to inhibit overturning
 - All of the above
49. Per ASTM F1159 Gates shall
- Open away from the ride unless equipped with a positive locking device
 - Shall be 42" tall and prevent a 4" ball from passing through any section or cross section
 - Shall be designed to NOT contact the ride or passengers
 - All of the above
50. Per ASTM 2291 Stairs and Ramps shall
- Be constructed to provide a safe entrance and exit
 - Must have a non-skid surface
 - Have hand rails that are secured and of the proper size and height
 - Are not required on structures deemed an amusement ride by code
51. When an issue arises outside of the Professional Inspector's scope of expertise
- Cancel or postpone the inspection if necessary
 - Consult with facility maintenance director
 - Consult with a separate and appropriate qualified person to complete the inspection
 - All the above
52. Under ASTM Standards inspections should include verification of the organizations emergency response plan.
- True
 - False
53. Under ASTM standards the following documentation shall be maintained by the owner/operator:
- Initial acceptance inspection report
 - Acceptance inspection report/s for all major course modifications.
 - Written policies, procedures and operational practices.
 - All of the above
54. You have been hired to conduct a third party inspection on a newly commissioned element. What type of inspection are you conducting?
- Acceptance
 - Professional
 - Operator Operational
 - None of the above

55. On a zip line using $\frac{1}{2}$ " sized wire rope with an ultimate breaking strength of 26,600 lbs. which of the following combination of dead and live loads would be acceptable and pass inspection.
- 7,008 lbs.
 - 4,160 lbs.
 - 13,300 lbs.
 - 5,980 lbs.

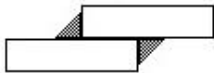
56. The type of welded joint illustrated below is called a?

- Butt joint
- Tee joint
- Lap joint
- Edge joint



57. The type of welded joint illustrated below is called a?

- Butt Joint
- Corner joint
- Lapp Joint
- Edge Joint



58. The image below is an example of what tool used for ride or component testing

- Dynamometer
- Load Cell
- Tension Meter
- Diameter Gauge



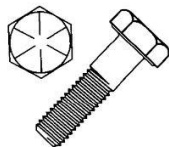
59. The image illustrated below is an example of what tool used for testing a component or system.

- Strain Gauge
- Load Cell
- Tension Meter
- Diameter Gauge



60. The illustration below is of a grade _____ Bolt?

- A
- 5
- 3
- 8



61. ASTM F2291 Requires Letterings on Warning Signs for Amusement Rides to be a minimum of what height?

- 2-1/2"
- 3"
- 2"
- That all lettering be bold, clear in intent and installed in a visible location

62. Despite the presence of standards published by organizations like ACCT, ASTM, EN , CWA, etc. Regulatory bodies have the authority to set their own regional codes or regulations that may have less OR more requirements than any of the above industry standards.

- True
- False.

63. Under the ASTM Standards a Hazards Analysis shall be completed prior to commissioning and a written report that identifies known hazards and specific ways to minimize these hazards shall be provided to the client.
- True
 - False
64. It is the responsibility of the _____ to ensure that you as an inspector are qualified and if required registered with a jurisdictional authority to inspect a structure deemed an Amusement Ride prior to inspecting a ride in that region.
- You the individual inspector
 - The Inspection Body or your employer
 - The jurisdictional authority
 - ACCT
65. Under ASTM standards the inspector must observe the ride or system in operation at the time of inspection in order to properly complete and document the inspection report.
- True
 - False