PRACTICE TEST 7: PAINTING, FINISHING, AND CORROSION CONTROL

Instructions: Select the best answer for each question. Each question is based on the Airframe Mechanic Certification Standards

1. The first step in preparing aluminum for painting is:
   A. Applying primer immediately
   B. Cleaning with approved solvent to remove oils and grease
   C. Sanding with coarse grit
   D. Applying topcoat

2. Conversion coating (Alodine) on aluminum produces what color?
   A. White
   B. Red
   C. Black
   D. Golden or tan

3. The primary purpose of conversion coating is to:
   A. Improve corrosion resistance and paint adhesion
   B. Change metal color only
   C. Remove metal
   D. Polish surface

4. Mechanical cleaning methods include:
   A. Chemical stripping only
   B. Solvent wiping
   C. Sanding, abrasive blasting, and wire brushing
   D. Painting over dirt

5. Abrasive blasting should use what media for aluminum?
   A. Steel shot
   B. Aluminum oxide or glass beads avoiding steel
   C. Sand only
   D. Iron particles

6. Hand sanding aluminum should use grit ranging from:
   A. 180–400 grit for surface preparation
   B. 60–80 grit

C. 1000 grit
D. No sanding needed

7. Surface corrosion on aluminum appears as:
   A. Black deposits
   B. Red rust
   C. Green patina
   D. White or gray powdery deposits

8. Pitting corrosion creates:
   A. Surface staining only
   B. Uniform deterioration
   C. Small deep cavities penetrating metal
   D. Smooth surface

9. Intergranular corrosion:
   A. Attacks grain boundaries with minimal surface indication
   B. Is visible as heavy surface pitting
   C. Strengthens metal
   D. Is cosmetic only

10. Exfoliation corrosion appears as:
    A. Small round pits
    B. Layered metal lifting and separating
    C. Uniform darkening
    D. No visible damage

11. Stress corrosion cracking requires:
    A. Compression stress only
    B. Temperature extremes
    C. Impact loads
    D. Tensile stress and corrosive environment together

12. Filiform corrosion appears as:
    A. Heavy pitting
    B. Uniform surface attack
    C. Worm-like patterns under paint
    D. No visible pattern

13. Corrosion removal from aluminum uses:
    A. Steel wire brushes
    B. Aluminum wool, abrasives, or chemical removers
    C. Hammer and chisel
    D. Water only

14. When removing corrosion, edges should be:
    A. Feathered smooth with fine grit (320–400)
    B. Left sharp
    C. Ground perpendicular
    D. Not blended

15. Blending limits for skin corrosion removal typically allow:
    A. Complete removal
    B. 50% thickness loss
    C. 10% thickness loss in lightly loaded areas
    D. No material removal

16. Corrosion-prone areas include:
    A. Smooth surfaces only
    B. Wing tips
    C. Control surfaces
    D. Lap joints, battery areas, wheel wells, bilges

17. Dissimilar metal corrosion is prevented by:
    A. Insulating with primer and sealant
    B. Direct metal contact
    C. Water application
    D. Removing all metal

18. Chromate conversion coating provides:
    A. Color only
    B. Corrosion protection and paint adhesion
    C. No benefit
    D. Temporary protection

19. Zinc chromate primer is known for:
    A. Poor corrosion protection
    B. Blue color
    C. Excellent corrosion inhibition
    D. Water solubility

20. Epoxy primer advantages include:
    A. Poor adhesion
    B. Single-component ease
    C. Fast drying only
    D. Superior adhesion and chemical resistance

21. Wash primers (etch primers) contain:
    A. No active ingredients

B. Phosphoric acid for etching and bonding
C. Water only
D. Paint thinner

22. Wash primer thickness should be:
A. Very thick
B. Random
C. Thin, typically 0.0002–0.0003 inch
D. Multiple heavy coats

23. Polyurethane topcoats provide:
A. Excellent gloss retention and chemical resistance
B. Poor durability
C. Single component ease
D. Water cleanup

24. Acrylic lacquer finishes:
A. Are two-component systems
B. Require baking
C. Never dry
D. Quick-drying, single component, less durable

25. Selecting light colors for aircraft reduces:
A. Visibility
B. Cost
C. Heat absorption improving cabin comfort
D. Durability

26. Dark colors on aircraft:
A. Reflect all heat
B. Absorb heat increasing cabin temperature
C. Have no thermal effect
D. Reduce weight

27. Siphon-feed spray guns have the cup:
A. On top
B. Built-in
C. No cup
D. Below the gun

28. Gravity-feed spray guns position the cup:
A. Above the gun requiring lower air pressure
B. Below the gun

C. To the side
D. Not used

29. HVLP spray guns operate at:
    A. Very high pressure
    B. High volume, low pressure (<10 psi at cap)
    C. No air flow
    D. Extreme pressure

30. HVLP advantages include:
    A. High overspray
    B. Difficult control
    C. Reduced overspray and better transfer efficiency
    D. No atomization

31. Spray gun distance from surface should be:
    A. 2–4 inches
    B. 12–18 inches
    C. 36 inches
    D. 6–10 inches

32. Spray gun movement should be:
    A. Perpendicular, parallel motion, consistent speed
    B. Arcing motion
    C. Random pattern
    D. Stationary

33. Spray pattern overlap should be:
    A. None
    B. 10%
    C. 50% for uniform coverage
    D. 90%

34. Trigger control on spray gun:
    A. Always full on
    B. Released while moving, on/off at ends of stroke
    C. Never released
    D. Random

35. Spray booth ventilation must:
    A. Provide adequate air exchange removing vapors
    B. Be sealed
    C. Recirculate air
    D. Use open flames

36. Spray booth design typically uses:
    A. No air movement
    B. Sealed environment
    C. Open doors
    D. Downdraft or cross-draft airflow

37. Explosion-proof electrical equipment is required because:
    A. It looks better
    B. Regulations require it
    C. Paint vapors are flammable requiring spark-free equipment
    D. It's cheaper

38. Respiratory protection for painting requires:
    A. Organic vapor respirator with particulate filters
    B. No protection
    C. Dust mask only
    D. Welding helmet

39. Supplied-air respirators are required for:
    A. All painting
    B. Isocyanate-containing coatings (polyurethane)
    C. Water-based paints
    D. No applications

40. Protective clothing for painting includes:
    A. Regular clothes
    B. Swimwear
    C. No protection needed
    D. Coveralls, gloves, and eye protection

41. Registration marks on U.S. aircraft begin with:
    A. Letter N followed by up to 5 characters
    B. Letter A
    C. Letter U
    D. Numbers only

42. Minimum registration mark height for aircraft over 30 feet wingspan:
    A. 6 inches
    B. 8 inches
    C. 12 inches
    D. 24 inches

43. Registration marks for smaller aircraft (under 30 feet wingspan) require minimum height of:
    A. 1 inch

B. 3–12 inches depending on size
C. 18 inches
D. No requirement

44. Width-to-height ratio for registration marks should be:
A. 1:1
B. 1:2
C. 3:1
D. 2:3 (2/3 width to height)

45. Character stroke width for marks should be:
A. 1/2 character height
B. Equal to height
C. 1/6 character height
D. Random

46. Spacing between registration characters should be:
A. 1/4 character width minimum
B. No spacing
C. Full character width
D. Random

47. Registration marks must have:
A. Any color combination
B. Blue background
C. No contrast needed
D. Adequate contrast for readability

48. Registration marks on wings appear:
A. On top surfaces
B. Under left wing readable from left
C. Under right wing
D. Not required on wings

49. Vertical stabilizer or fuselage marks display on:
A. Front only
B. Left side only
C. Both sides of vertical stabilizer or rear fuselage
D. Top surface

50. Fuel grade markings must be:
A. At or near each fuel filler cap
B. In cockpit only

C. On wings
D. Not required

51. Oil grade placards should be located:
A. In cabin
B. On wings
C. Random locations
D. Near oil filler opening

52. Tire pressure placards appear:
A. In cabin
B. On or near landing gear
C. On instrument panel
D. Not required

53. Emergency exit markings use:
A. Red color and specific markings
B. Any color
C. No markings
D. Blue only

54. Thinning paint requires:
A. Any solvent
B. Water always
C. Manufacturer-specified thinner
D. No thinning

55. Paint mixing ratios must follow:
A. Random guessing
B. Any proportion
C. Painter preference
D. Manufacturer specifications exactly

56. Paint viscosity for spraying is measured with:
A. Ruler
B. Viscosity cup (Zahn cup) measuring flow time
C. Thermometer
D. Scale

57. Paint temperature affects:
A. Nothing
B. Color only
C. Viscosity and application properties
D. Container only

58. Humidity during painting:
    A. Should be moderate (40–60%) to prevent blushing
    B. Should be 100%
    C. Doesn't matter
    D. Should be 0%

59. Cold temperatures during painting:
    A. Are ideal
    B. Improve finish
    C. Speed curing
    D. Slow drying and may prevent proper cure

60. Hot weather painting may cause:
    A. Perfect finish
    B. Blushing, dry spray, or poor flow
    C. Delayed drying
    D. No issues

61. Paint runs and sags result from:
    A. Excessive film thickness or slow gun movement
    B. Thin coats
    C. Fast movement
    D. Proper technique

62. Orange peel finish indicates:
    A. Perfect application
    B. Ideal results
    C. Improper viscosity, pressure, or distance
    D. No defect

63. Dry spray appears as:
    A. Smooth finish
    B. Wet surface
    C. Glossy appearance
    D. Rough, powdery surface from too-fast solvent evaporation

64. Fish eyes in paint are caused by:
    A. Perfect surface prep
    B. Silicone or oil contamination
    C. Proper cleaning
    D. Ideal conditions

65. Blushing occurs when:
    A. Temperature is perfect

B. Surface is contaminated
C. Moisture condenses in finish during drying
D. Coat is too thin

66. Paint storage requires:
A. Cool, dry area away from ignition sources
B. Open flames nearby
C. Extreme heat
D. Outdoor sun exposure

67. Shelf life of mixed two-component paints:
A. Unlimited
B. Limited to pot life (hours to days)
C. Years
D. Decades

68. Spray equipment cleaning should occur:
A. Once per year
B. Never
C. Monthly
D. Immediately after use

69. Paint waste disposal requires:
A. Following environmental regulations for hazardous waste
B. Pouring down drain
C. Burning
D. Random disposal

70. Lead-based primers:
A. Are preferred
B. Are non-toxic
C. Have been phased out due to toxicity
D. Are required

71. Chromate-free primers are being developed to:
A. Reduce cost only
B. Improve color
C. Increase weight
D. Address environmental and health concerns

72. Touch-up painting requires:
A. Complete refinishing
B. Proper surface prep, feathering, and color matching

C. No preparation
D. Random application

73. Feathering paint edges means:
A. Blending repair edges smooth with surrounding finish
B. Leaving sharp lines
C. Removing all surrounding paint
D. No blending

74. Color matching requires:
A. Guessing
B. Any color
C. Using paint codes or mixing to match original
D. Contrast

75. Masking tape quality affects:
A. Nothing
B. Color
C. Weight
D. Edge sharpness and paint bleed prevention

76. Masking should be removed:
A. After complete cure
B. While paint still slightly wet to prevent edge lifting
C. Never
D. Before painting

77. Paint stripper safety requires:
A. No protection
B. Shorts and t-shirt
C. Protective equipment; many strippers caustic
D. Open flames

78. Chemical paint strippers may damage:
A. Plastics, composites, and some metals requiring care
B. Nothing
C. Only wood
D. Steel only

79. Mechanical paint removal uses:
A. Chemicals only
B. Heat only
C. Water only
D. Sanding, media blasting, or scraping

80. After paint stripping, surfaces must be:
    A. Left as-is
    B. Neutralized, cleaned, and prepared per specifications
    C. Painted immediately without cleaning
    D. Ignored

81. Zinc-rich primers provide:
    A. Galvanic protection through sacrificial zinc
    B. No corrosion protection
    C. Color only
    D. Temporary coating

82. Corrosion inhibiting compounds (CICs) are used:
    A. For color
    B. As topcoats
    C. In joints, seams, and hidden areas
    D. On external surfaces only

83. Drainage holes in structures:
    A. Should be sealed
    B. Cause corrosion
    C. Are decorative
    D. Must remain clear for moisture drainage

84. Bilge areas require:
    A. No special attention
    B. Regular inspection and cleaning preventing corrosion
    C. Sealing completely
    D. No maintenance

85. Battery compartments need:
    A. No protection
    B. Standard paint only
    C. Acid-resistant coatings and regular inspection
    D. No maintenance

86. Sound-deadening materials can:
    A. Trap moisture causing hidden corrosion
    B. Prevent all corrosion
    C. Improve corrosion resistance
    D. Be left indefinitely

87. Lap joints are corrosion-prone because:
    A. They're visible

B. They're strong
C. They're painted
D. Moisture enters and becomes trapped

88. Piano hinges corrode due to:
A. Strength
B. Moisture and contaminants trapped in hinge
C. Perfect design
D. Color

89. Inspection frequency for corrosion should be:
A. Based on aircraft age, environment, and usage
B. Never needed
C. Once in lifetime
D. Random

90. Seaplanes require:
A. No special inspection
B. Less inspection
C. More frequent corrosion inspection due to water exposure
D. No corrosion protection

91. Aircraft in coastal areas need:
A. Standard maintenance
B. Less maintenance
C. No special care
D. Enhanced corrosion prevention and inspection

92. Aircraft washed regularly:
A. Corrode faster
B. Show reduced corrosion from dirt/salt removal
C. Don't need inspection
D. Are damaged

93. Washing aircraft should use:
A. Harsh chemicals
B. Gasoline
C. Mild detergent and fresh water
D. Salt water

94. After washing, aircraft should be:
A. Dried thoroughly and lubricated as needed
B. Left wet

C. Not touched
D. Painted immediately

95. Waxing aircraft:
A. Causes corrosion
B. Is harmful
C. Traps dirt
D. Provides additional protection and easier cleaning

96. Polishing compounds should be:
A. Very aggressive always
B. Selected for surface type; avoid damaging finishes
C. Applied to bare metal only
D. Never used

97. Clear coating aluminum:
A. Protects polished finish from oxidation
B. Causes immediate corrosion
C. Is prohibited
D. Darkens metal

98. Anodizing aluminum creates:
A. Paint layer
B. Temporary coating
C. Protective oxide layer through electrochemical process
D. No change

99. Inspection of painted surfaces checks for:
A. Color only
B. Gloss only
C. Age only
D. Cracking, peeling, blistering, and corrosion

100. Paint failure signs include:
A. Perfect appearance
B. Chalking, fading, cracking, loss of adhesion
C. Smooth finish
D. No defects

Answer Explanations

1. B. Cleaning with approved solvent to remove oils and grease First step in surface preparation is cleaning with approved solvents (MEK, naphtha, or approved cleaners) removing oils, grease, and contaminants. Clean surface essential for proper adhesion of subsequent conversion coating and primer.

2. D. Golden or tan Conversion coating (Alodine, chromate conversion coating) produces characteristic golden, tan, or iridescent appearance on aluminum, indicating proper chemical treatment forming protective chromate layer.

3. A. Improve corrosion resistance and paint adhesion Conversion coating provides corrosion protection through chromate layer and significantly improves paint adhesion by creating chemically reactive surface for primer bonding, essential for durable finishes.

4. C. Sanding, abrasive blasting, and wire brushing Mechanical cleaning methods include hand sanding, abrasive blasting with appropriate media, wire brushing (aluminum or stainless wire for aluminum), and scotch-brite pads removing oxidation and corrosion.

5. B. Aluminum oxide or glass beads avoiding steel Abrasive blasting aluminum requires non-ferrous media (aluminum oxide, glass beads, plastic media) preventing iron contamination causing corrosion. Steel shot/grit prohibited on aluminum structures.

6. A. 180-400 grit for surface preparation Hand sanding aluminum uses 180-400 grit abrasives for surface preparation and paint adhesion. Coarser grits remove corrosion; finer grits prepare for painting without excessive material removal.

7. D. White or gray powdery deposits Surface corrosion on aluminum appears as white or gray powdery deposits (aluminum oxide) on surface. Early stage corrosion, easily removed, but indicates need for protective treatment.

8. C. Small deep cavities penetrating metal Pitting corrosion creates small diameter deep cavities penetrating into metal, caused by localized breakdown of protective oxide. Serious form weakening structure with minimal surface indication.

9. A. Attacks grain boundaries with minimal surface indication Intergranular corrosion attacks aluminum grain boundaries deep into material with minimal surface appearance. Extremely serious, difficult to detect, can cause catastrophic failure without obvious warning.

10. B. Layered metal lifting and separating Exfoliation corrosion causes metal to lift and separate in layers like leaves of book, following grain structure. Advanced form of intergranular corrosion visible as surface lifting.

11. D. Tensile stress and corrosive environment together Stress corrosion cracking requires simultaneous presence of tensile stress (applied or residual) and specific corrosive environment. Cracks propagate perpendicular to stress potentially causing sudden failure.

12. C. Worm-like patterns under paint Filiform corrosion appears as worm-like thread patterns spreading under paint film, typically on aluminum. Caused by moisture penetration at coating defects, appears as fine tunnels radiating outward.

13. B. Aluminum wool, abrasives, or chemical removers Corrosion removal from aluminum uses aluminum wool, stainless steel brushes, abrasives, or approved chemical corrosion removers. Never use steel tools causing iron contamination and galvanic corrosion.

14. A. Feathered smooth with fine grit (320-400) After corrosion removal, blend edges smooth using fine grit abrasives (320-400 grit) feathering repair into surrounding material, preventing stress concentrations and creating smooth paint surface.

15. C. 10% thickness loss in lightly loaded areas Blending limits typically allow 10% thickness loss in lightly loaded areas per manufacturer specifications. Highly stressed areas have stricter limits; excessive removal requires engineering evaluation or replacement.

16. D. Lap joints, battery areas, wheel wells, bilges Corrosion-prone areas include lap joints trapping moisture, battery compartments from acid spills, wheel wells from brake dust/moisture, bilges accumulating fluids, requiring frequent inspection.

17. A. Insulating with primer and sealant Dissimilar metal corrosion prevented by insulating materials with primers and sealants preventing electrical contact and electrolyte presence. Eliminates galvanic cell formation causing accelerated corrosion.

18. B. Corrosion protection and paint adhesion Chromate conversion coating provides corrosion protection through passive chromate layer and excellent paint adhesion base, essential for durable aircraft finishes meeting corrosion resistance requirements.

19. C. Excellent corrosion inhibition Zinc chromate primer provides excellent corrosion inhibition through chromate pigments passivating metal surface. Traditional aircraft primer, though environmental concerns driving development of chromate-free alternatives.

20. D. Superior adhesion and chemical resistance Epoxy primers offer superior adhesion to properly prepared surfaces, excellent chemical resistance, flexibility, and corrosion protection. Two-component system requiring mixing but providing outstanding performance.

21. B. Phosphoric acid for etching and bonding Wash primers (etch primers) contain phosphoric acid etching metal surface microscopically, creating mechanical bond and chemical conversion layer improving adhesion. Applied as very thin coat.

22. C. Thin, typically 0.0002-0.0003 inch Wash primer applied as extremely thin coat (0.0002-0.0003 inch), essentially pre-treatment rather than build coat. Thick application reduces effectiveness and prevents proper topcoat adhesion.

23. A. Excellent gloss retention and chemical resistance Polyurethane topcoats provide outstanding gloss retention, chemical resistance, abrasion resistance, and durability. Two-component system producing durable high-quality finish for aircraft exteriors.

24. D. Quick-drying, single component, less durable Acrylic lacquer finishes are quick-drying, single-component, easy to apply and repair but less durable than modern polyurethanes. Used for touch-up and non-critical applications.

25. C. Heat absorption improving cabin comfort Light colors reflect solar radiation reducing heat absorption and cabin temperatures, improving comfort and reducing air conditioning loads. White most effective for heat rejection.

26. B. Absorb heat increasing cabin temperature Dark colors absorb solar radiation increasing metal temperatures and cabin heat, potentially affecting structural temperatures, fuel temperatures, and passenger comfort negatively.

27. D. Below the gun Siphon-feed spray guns have paint cup positioned below gun, requiring higher air pressure creating vacuum drawing paint upward. Less common for modern applications.

28. A. Above the gun requiring lower air pressure Gravity-feed spray guns position cup above gun allowing gravity to feed paint, requiring lower air pressure, improving atomization and reducing overspray compared to siphon-feed.

29. B. High volume, low pressure (<10 psi at cap) HVLP (High Volume Low Pressure) spray guns operate at high air volume but low pressure at cap (<10 psi), improving transfer efficiency and reducing overspray.

30. C. Reduced overspray and better transfer efficiency HVLP advantages include significantly reduced overspray (60-80% transfer efficiency vs. 25-35% conventional), material savings, reduced emissions, and better environmental compliance.

31. D. 6-10 inches Spray gun should maintain 6-10 inches from surface for proper atomization and wet coat application. Closer causes runs; farther causes dry spray and poor adhesion.

32. A. Perpendicular, parallel motion, consistent speed Spray gun movement should be perpendicular to surface, parallel sweeping motion, consistent speed throughout stroke. Arcing causes uneven film thickness with heavy centers and dry edges.

33. C. 50% for uniform coverage Spray passes should overlap approximately 50% ensuring uniform coverage without excessive buildup or thin spots. Provides consistent film thickness and color across entire surface.

34. B. Released while moving, on/off at ends of stroke Proper trigger control releases trigger while moving gun at stroke ends, then triggers at beginning of each pass. Prevents excessive buildup at reversal points causing runs.

35. A. Provide adequate air exchange removing vapors Spray booth ventilation must provide adequate air exchange (typically 100 ft/min face velocity) removing flammable vapors and overspray, maintaining safe atmosphere below explosive limits.

36. D. Downdraft or cross-draft airflow Spray booths typically use downdraft (floor exhaust) or cross-draft (rear wall exhaust) airflow patterns efficiently removing overspray and vapors while maintaining uniform air movement.

37. C. Paint vapors are flammable requiring spark-free equipment Explosion-proof electrical equipment required because paint vapors are flammable, potentially creating explosive atmosphere. Any spark from non-explosion-proof equipment could ignite vapors causing explosion.

38. A. Organic vapor respirator with particulate filters Painting requires organic vapor respirator with particulate pre-filters protecting against solvent vapors and overspray particles. Cartridges must be appropriate for specific chemicals used.

39. B. Isocyanate-containing coatings (polyurethane) Supplied-air respirators required for isocyanate-containing coatings (polyurethane, some primers) because isocyanates cause severe respiratory sensitization. Cartridge respirators provide insufficient protection.

40. D. Coveralls, gloves, and eye protection Protective clothing includes disposable coveralls preventing skin contact, nitrile gloves (solvent-resistant), and safety glasses/goggles protecting eyes from splashes and vapors.

41. A. Letter N followed by up to 5 characters U.S. civil aircraft registration marks begin with letter N (nationality mark) followed by 1-5 additional characters (numbers or letters), assigned by FAA.

42. C. 12 inches Aircraft with wingspan over 30 feet require minimum 12-inch registration mark height ensuring visibility and readability from distance per FAA regulations.

43. B. 3-12 inches depending on size Smaller aircraft (under 30 feet wingspan) require registration marks varying 3-12 inches height depending on specific aircraft size, maintaining proportional visibility.

44. D. 2:3 (2/3 width to height) Registration mark character width should be 2/3 of height (2:3 ratio) creating properly proportioned letters and numbers ensuring readability and meeting regulatory requirements.

45. C. 1/6 character height Character stroke width (line thickness) should be 1/6 of character height creating clear, readable marks with proper proportions meeting visibility standards.

46. A. 1/4 character width minimum Spacing between registration characters should be minimum 1/4 character width ensuring individual character readability while maintaining compact overall mark appearance.

47. D. Adequate contrast for readability Registration marks must have adequate contrast with background for readability, typically using light marks on dark backgrounds or vice versa, ensuring visibility.

48. B. Under left wing readable from left Wing registration marks appear on underside of left wing reading from left wingtip toward fuselage, providing ground visibility when overhead.

49. C. Both sides of vertical stabilizer or rear fuselage Registration marks displayed on both sides of vertical stabilizer or, if insufficient area, both sides of rear fuselage ensuring visibility from either side.

50. A. At or near each fuel filler cap Fuel grade markings required at or adjacent to each fuel filler opening specifying minimum fuel grade (e.g., "100LL") preventing improper fueling.

51. D. Near oil filler opening Oil grade placards located at or near oil filler cap specifying approved oil grades and quantities ensuring proper servicing.

52. B. On or near landing gear Tire pressure placards display on or near landing gear indicating proper inflation pressures for main and nose wheels ensuring safe operation.

53. A. Red color and specific markings Emergency exit markings use red color with specific size and placement requirements ensuring easy identification during emergency evacuation.

54. C. Manufacturer-specified thinner Paint thinning requires manufacturer-specified thinner matched to coating system. Wrong thinner can cause adhesion failure, improper cure, blushing, or coating breakdown.

55. D. Manufacturer specifications exactly Paint mixing ratios must follow manufacturer specifications exactly (typically by volume or weight) ensuring proper cure, properties, and performance. Incorrect ratios cause failures.

56. B. Viscosity cup (Zahn cup) measuring flow time Paint viscosity measured with viscosity cup (Zahn cup) timing how long specific volume flows through calibrated orifice, indicating proper thinning for spray application.

57. C. Viscosity and application properties Paint temperature significantly affects viscosity (thicker when cold, thinner when hot), flow characteristics, atomization, and leveling. Maintain material and substrate at recommended temperatures.

58. A. Should be moderate (40-60%) to prevent blushing Moderate humidity (40-60%) prevents blushing from moisture condensation while avoiding excessive dryness causing too-rapid evaporation and poor flow.

59. D. Slow drying and may prevent proper cure Cold temperatures slow solvent evaporation and chemical reactions, potentially preventing proper cure, causing poor flow, runs, or incomplete cross-linking in two-component systems.

60. B. Blushing, dry spray, or poor flow Hot weather accelerates evaporation causing dry spray (paint drying before reaching surface), poor leveling, or blushing from rapid temperature drops during evaporation.

61. A. Excessive film thickness or slow gun movement Paint runs and sags result from excessive film thickness from too-close gun distance, slow movement, overlapping too much, or wrong viscosity allowing gravity to pull wet coating.

62. C. Improper viscosity, pressure, or distance Orange peel (textured surface resembling orange skin) indicates poor atomization from improper viscosity, air pressure too low/high, or incorrect gun distance preventing proper flow.

63. D. Rough, powdery surface from too-fast solvent evaporation Dry spray creates rough, powdery surface when paint dries before reaching surface from excessive gun distance, too-fast solvents, hot weather, or low humidity.

64. B. Silicone or oil contamination Fish eyes (small circular craters) caused by silicone or oil contamination on surface preventing wetting. Contaminants repel coating creating defect requiring complete surface cleaning.

65. C. Moisture condenses in finish during drying Blushing (whitish haze or cloudiness) occurs when moisture condenses in drying paint film from rapid evaporation cooling, common in high humidity or with fast-evaporating solvents.

66. A. Cool, dry area away from ignition sources Paint storage requires cool, dry conditions away from heat sources, direct sunlight, and ignition sources. Flammable liquids must be in approved cabinets with proper ventilation.

67. B. Limited to pot life (hours to days) Mixed two-component paints have limited pot life (working time) from hours to days depending on system before cross-linking makes material unusable. Unmixed components have longer shelf life.

68. D. Immediately after use Spray equipment must be cleaned immediately after use preventing paint from drying and clogging passages. Dried paint in equipment extremely difficult to remove requiring replacement.

69. A. Following environmental regulations for hazardous waste Paint waste disposal requires following federal, state, and local hazardous waste regulations. Cannot pour down drains, burn, or dispose in regular trash due to environmental/health hazards.

70. C. Have been phased out due to toxicity Lead-based primers largely phased out due to toxicity concerns, though some specialty applications remain. Replaced with safer alternatives providing equivalent corrosion protection.

71. D. Address environmental and health concerns Chromate-free primers being developed addressing environmental concerns (chromium toxicity, groundwater contamination) and worker health while maintaining corrosion protection performance.

72. B. Proper surface prep, feathering, and color matching Touch-up painting requires proper surface preparation removing contaminants, feathering edges smooth, priming if needed, and careful color matching creating invisible repair blending with original finish.

73. A. Blending repair edges smooth with surrounding finish Feathering gradually tapers paint edges using progressively finer abrasives creating smooth transition from repair to original finish, preventing visible edge lines or thickness steps.

74. C. Using paint codes or mixing to match original Color matching uses manufacturer paint codes when available or custom mixing matching original finish accounting for fading, using tinted clear coats or adjusting pigments.

75. D. Edge sharpness and paint bleed prevention Quality masking tape provides sharp paint edges, prevents bleed-under, removes cleanly without residue, and withstands solvents in coating systems ensuring professional demarcation lines.

76. B. While paint still slightly wet to prevent edge lifting Masking tape removed while paint still slightly tacky prevents paint from bonding to tape and lifting when removed, creating clean sharp edges.

77. C. Protective equipment; many strippers caustic Paint stripper safety requires protective equipment (chemical-resistant gloves, goggles, respirator) because many strippers contain caustic chemicals causing severe burns, respiratory irritation, and skin damage.

78. A. Plastics, composites, and some metals requiring care Chemical paint strippers can damage plastics, composite materials, some metal alloys, and rubber/seals requiring masking or careful application avoiding contact with sensitive components.

79. D. Sanding, media blasting, or scraping Mechanical paint removal uses sanding, media blasting with appropriate abrasives, or careful scraping removing coatings without chemicals. Requires care preventing substrate damage.

80. B. Neutralized, cleaned, and prepared per specifications After chemical stripping, surfaces must be neutralized (removing stripper residue), thoroughly cleaned with solvents, and prepared per coating system specifications ensuring proper adhesion.

81. A. Galvanic protection through sacrificial zinc Zinc-rich primers provide galvanic (sacrificial) protection where zinc corrodes preferentially protecting underlying steel, similar to galvanizing. High zinc content (typically 85-95% by weight) required.

82. C. In joints, seams, and hidden areas Corrosion inhibiting compounds (CICs) applied in joints, lap seams, piano hinges, and hidden areas where moisture can accumulate, providing long-term corrosion protection.

83. D. Must remain clear for moisture drainage Drainage holes must remain clear allowing accumulated moisture to drain, preventing corrosion from trapped water. Regular inspection ensures holes not blocked by dirt or corrosion products.

84. B. Regular inspection and cleaning preventing corrosion Bilge areas require regular inspection and cleaning removing accumulated fluids, dirt, and debris preventing corrosion from constant moisture exposure in low-lying areas.

85. C. Acid-resistant coatings and regular inspection Battery compartments need acid-resistant coatings protecting from electrolyte spills and regular inspection/cleaning removing acid deposits preventing severe corrosion from battery acid.

86. A. Trap moisture causing hidden corrosion Sound-deadening materials can trap moisture against metal surfaces creating hidden corrosion, requires periodic removal for inspection or selection of materials allowing moisture escape.

87. D. Moisture enters and becomes trapped Lap joints are corrosion-prone because moisture enters through fastener holes or capillary action becoming trapped between layers creating ideal environment for sustained corrosion.

88. B. Moisture and contaminants trapped in hinge Piano hinges accumulate moisture, salt, and contaminants in tight spaces between knuckles where cleaning difficult, creating persistent corrosion requiring regular inspection and lubrication.

89. A. Based on aircraft age, environment, and usage Corrosion inspection frequency depends on aircraft age (older requires more frequent), operating environment (coastal/humid areas more often), and usage patterns (seaplanes/cropdusters more frequently).

90. C. More frequent corrosion inspection due to water exposure Seaplanes require significantly more frequent corrosion inspection due to constant freshwater or saltwater exposure accelerating corrosion requiring aggressive prevention and inspection programs.

91. D. Enhanced corrosion prevention and inspection Aircraft in coastal areas need enhanced corrosion prevention (more frequent washing, protective treatments) and inspection due to salt spray and high humidity dramatically accelerating corrosion.

92. B. Show reduced corrosion from dirt/salt removal Regular washing removes salt, dirt, and corrosive contaminants significantly reducing corrosion rates, particularly in coastal or industrial environments where accumulation accelerates deterioration.

93. C. Mild detergent and fresh water Aircraft washing uses mild detergent and fresh water avoiding harsh chemicals damaging finishes. Particular attention to removing salt from seaplane operations or coastal exposure.

94. A. Dried thoroughly and lubricated as needed After washing, aircraft must be dried thoroughly preventing moisture accumulation in joints and cavities, then lubricated per maintenance manual preventing corrosion from water exposure.

95. D. Provides additional protection and easier cleaning Waxing aircraft provides additional protection for painted surfaces, UV resistance, easier cleaning as dirt doesn't adhere readily, and enhanced appearance maintaining finish longevity.

96. B. Selected for surface type; avoid damaging finishes Polishing compounds must match surface type; aggressive compounds can damage painted finishes. Different formulations for bare aluminum, painted surfaces, or clear-coated finishes.

97. A. Protects polished finish from oxidation Clear coating polished aluminum protects mirror finish from oxidation and corrosion, maintaining appearance without repeated polishing. Requires proper surface preparation and compatible clear coat.

98. C. Protective oxide layer through electrochemical process Anodizing aluminum creates hard, thick aluminum oxide layer through electrochemical process providing excellent corrosion and wear resistance. Can be dyed various colors or left natural.

99. D. Cracking, peeling, blistering, and corrosion Painted surface inspection checks for cracking (age/flexing), peeling (adhesion loss), blistering (moisture/contamination), corrosion beneath paint, and general finish deterioration requiring maintenance.

100. B. Chalking, fading, cracking, loss of adhesion Paint failure signs include chalking (surface powder from UV degradation), fading (color loss), cracking (brittleness), peeling/flaking (adhesion loss), indicating need for refinishing.