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The following sample exam for Inspection Authorization (IA) is suitable study material and is a sample representation of questions that can be found on the IA test. The applicant must realize that these questions are to be used as a study guide, and are not necessarily actual test questions. The full IA test contains 50 questions and is comprehensive, as it must test your knowledge in many subject areas. When applying for an IA you should review 14 Code of Regulations CFR part 65, section 65.91(c)(5), for the knowledge areas on the test. The Application Identification, Information Verification and Authorization Requirements Matrix lists all FAA exams. It is available at [http://www.faa.gov/training\\_testing/testing/media/testing\\_matrix.pdf](http://www.faa.gov/training_testing/testing/media/testing_matrix.pdf).

The FAA testing system is supported by a series of supplement publications. The supplement material consists of excerpts of selected advisory circulars, airworthiness directives, Code of Federal Regulations, type certificate data sheets, aircraft specifications, FAA orders, and forms; FAA-CT-8080-8D, Computer Testing Supplement for Inspection Authorization is available at [https://www.faa.gov/training\\_testing/testing/supplements/media/FAA-CT-8080-8D.pdf](https://www.faa.gov/training_testing/testing/supplements/media/FAA-CT-8080-8D.pdf)

**Sample IAR Exam:**

1 . IAR027

The sight line drawn on material to be bent in a cornice brake is located at what position from the bend tangent line?

- A) The setback measurement.
- B) The bend radius length.
- C) The bend allowance length.

2 . IAR027

To determine the length of a flat in a sheet metal project, which measurement is subtracted from the mold line length?

- A) The bend radius.
- B) The setback dimension.
- C) The bend allowance.

3 . IAR006

What is the setback for a straight bend in 2024-T4 sheet metal of .032 inch thickness formed to a bend angle of 30°?

- A) .0337
- B) .1257
- C) .2679

4 . IAR018

As the holder of an IA, you are inspecting an airframe major repair. The work was accomplished using previously approved data based on the manufacturer's structure repair manual. The person who made the repair deviated from the data. This was done by substituting a row of 20 AN427-4 rivets that attaches the aileron skin to the aileron ribs with 20 mechanically-licking blind rivets.

In view of this change to the repair what action would you take?

- A) Reject the repair; the use of the blind rivets would be a major repair by itself.
- B) Approve the repair; the use of the blind rivets would be a minor deviation by itself.
- C) Require additional approval of the rivet substitution using AC43.13-1B for the repair.

5 . IAR009

In reviewing the installation data for a proposed STC, you note that there will be additional vacuum supply demand. The customer's aircraft will require the following additional vacuum system plumbing to make the installation: 2 feet of 1/2 inch tubing, and two 90 degree elbows.

This plumbing will supply an additional instrument that requires 1.20 CFM airflow. The existing vacuum system requires 4.80 CFM of airflow. The optimum instrument pressure differential will remain at 4.0 in. Hg.

How much additional pressure drop will result from the added plumbing; answer in inches of mercury (in. Hg.)?

- A) .4455 in. Hg.
- B) .6000 in. Hg.
- C) .6455 in. Hg.

6 . IAR001

When selecting an electrical conductor that will operate at an elevated temperature (above 20 °C) the  $T_2$  factor requires what value for its determination?

- A) The constant 234.5 °C.
- B)  $L_2$  (maximum allowable run length).
- C)  $I_{max}$  (maximum allowable current).

7 . IAR013

With regards to minimum bend radius, how would a section of Mil-H-8794-5 hydraulic hose used in a flexing installation of 90° and operating at 2,500 psi compare to the same hose used in a non-flexing installation at maximum operating pressure?

The flexing installation would

- A) have a greater minimum bend radius.
- B) have a smaller minimum bend radius.
- C) be equal to the non-flexing installation.

8 . IAR013

How is the minimum allowable bend radius affected by installation angle of a hydraulic hose in a non-flexing, constant pressure system? As the angle increases, the minimum bend radius

- A) increases.
- B) decreases.
- C) remains constant.

9 . IAR021

A Cessna 421B operated as a 14 CFR part 91 airplane would have inspections conducted in accordance with

- A) 14 CFR part 43, appendix D.
- B) 14 CFR part 91, section 91.409 (Inspections).
- C) 14 CFR part 43, section 43.16 (Airworthiness Limitations).

10 . IAR015

A turnbuckle on a 5/32 cable, safe tied with a single wrap of stainless steel wire, must have wire of at least what diameter?

- A) .030.
- B) .040.
- C) .057.

11 . IAR005

A major repair requires the installation of AN3 bolts. What fractional size drill would be required for this installation?

- A) 3/16.
- B) 3/32.
- C) 3/64.

12 . IAR007

76° Fahrenheit is what on the Celsius scale?

- A) 25°.
- B) 37°.
- C) 44°.

13 . IAR030

The completion and signing of block 6 (conformity statement) of FAA Form 337 indicates

- A) FAA approval of the work only.
- B) Agency approval for return to service.
- C) The work was accomplished to FAA approved data.

14 . IAR012

What is the total weight of unusable fuel on a Twin Aero Commander, model 695, serial number 95039?

- A) 15.5 lbs.
- B) 33.6 lbs.
- C) 53.6 lbs.

15 . IAR029

What is the location for weight and balance purposes of any unusable fuel on Cessna model 210 serial number 21057660?

- A) +38.
- B) +46.
- C) +48.

16 . IAR014

During a sheet metal repair, a row of 2017T rivets installed by the aircraft manufacturer were replaced by an equal number of 2117T rivets of the same diameter by the person making the repairs. Would you, as an IA, approve the repair if it is otherwise eligible for return to service?

- A) Yes, the strength of 2117T rivets is greater than that of 2017T rivets.
- B) No, the strength of 2117T rivets is less than that of 2017T rivets.
- C) Yes, the strength of 2117T rivets is equal to that of 2017T rivets (2117T being the recommended replacement for 2017T).

17 . IAR022

At what static test load should a banner tow hitch be tested to ensure structural integrity of the aircraft structure?

- A) 1.5 times the operating weight of the banner.
- B) 2.0 times the operating weight of the banner.
- C) 2.5 times the operation weight of the banner.

18 . IAR032

Repairs to tubular engine mounts may be repaired by using a larger diameter replacement tube telescoped over the stub of the original member and welded in place. How is the replacement tube preferably cut?

- A) Fishmouth cut at 30°.
- B) Diagonally cut at 45°.
- C) Perpendicular cut at 90°.

19 . IAR003

Determine the estimated conductor temperature ( $T_2$ ) for Mil-W-22759/10 under the following conditions:

1. Ambient temperature 43° Celsius (110° Fahrenheit).
2. Conductor rating temperature 150° Celsius.
3. Circuit current is 5 amperes.
4.  $I_{max}$  current is 11 amperes.

- A) 72° Celsius.
- B) 115° Celsius.
- C) 201° Celsius.

20 . IAR014

You are asked to inspect a major repair that required the mechanic to fabricate a metal bracket made of .032 inch thick 2024-T3 aluminum alloy. The bracket was bent to a closed angle of 37°.

How much setback should the mechanic have used in the brake?

- A) .032 inch.
- B) .096 inch.
- C) .287 inch.

21 . IAR032

A rebuilt aircraft engine may be granted zero time by

- A) the manufacturer.
- B) a certified powerplant mechanic.
- C) an A&P mechanic who holds an Inspection Authorization.

22 . IAR011

While performing an annual inspection on a general aviation aircraft, you cannot find the operating limitations in the Type Certificate Data Sheet. In what document will it be found?

- A) Aircraft Maintenance Manual.
- B) Aircraft Part Catalog.
- C) Airplane Flight Manual.

23 . IAR020

The applicability statement of an airworthiness directive (AD) states 'applies to Martin model 50 aircraft,' this statement would cause the AD to apply to which of the following classification of aircraft?

- A) Any Martin model 50 aircraft.
- B) Only Martin model 50 aircraft with standard airworthiness certificates.
- C) Any Martin model 50 aircraft, except those with experimental certificates.

24 . IAR031

Airworthiness Directives (AD`s) may be issued to aircraft with which of the following categories?

- 1. Primary and Standard.
  - 2. Experimental and Restricted.
- A) 1, Primary and Standard.
  - B) 2, Experimental and Restricted.
  - C) Both #1 and #2.

25 . IAR020

How many club seats may be installed in Piper PA32-301T, serial number 8221552?

- A) 1.
- B) 2.
- C) 4.

26 . IAR023

When an aircraft engine manufacturer grants zero time to an engine after being rebuilt, it signifies that all internal parts are of

- A) manufacturer's new minimum limits.
- B) standard size used in newly manufactured engines.
- C) manufacturer's minimum and maximum dimensions.

27 . IAR031

The date in the box on the opening page of a Type Certificate Data Sheet indicates what?

- 1. The date of page 1 revision.
  - 2. The date of the revision number.
- A) Number 1, the date of the latest revision.
  - B) Number 2, the date of page 1 revision.
  - C) Both #1 and #2.

28 . IAR011

To determine if an aircraft is eligible for ski installation, which document could be referenced?

- A) Type certificate data sheets.
- B) Advisory Circular AC43.13-2A.
- C) Aircraft airworthiness certificate.

29 . IAR029

What is the weight for weight and balance purposes of any unusable fuel on Cessna model 210 serial number 21058713?

- A) 9 pounds.
- B) 12 pounds.
- C) 38 pounds.

30 . IAR013

What is the year of manufacture for Cessna serial number 21062194?

- A) 1966.
- B) 1977.
- C) 1980.

31 . IAR031

In accordance with 14 CFR Part 43, which of the following would NOT be a propeller major repair?

- A) Refinishing the blades.
- B) Replacement of tip fabric.
- C) Shortening of blades on a wood propeller.

32 . IAR017

The owner of an aircraft maintains separate records for airframe and engine. If that aircraft receives a replacement engine between annual inspections, what action would be required?

- A) A 100-hour inspection of the engine followed by a flight test.
- B) An inspection as required by the manufacturer and a maintenance record entry.
- C) Only the engine portion of the annual inspection with an entry in the engine's record.

33 . IAR031

For a normal category rotorcraft, where are the requirements for the 'Instructions for Continued Airworthiness' found?

- A) 14 CFR 21, subpart H.
- B) 14 CFR 23, section L.
- C) 14 CFR 27, appendix A.

34 . IAR021

Turbine aircraft engines are required to have lubrication systems because of the different flight attitudes and atmospheric conditions. The oil tanks must have an expansion space for no less than what percentage of the tank capacity?

- A) 5 percent.
- B) 10 percent.
- C) 15 percent.

35 . IAR017

During the records review at annual inspection, for which of the following would you expect to find a repair station maintenance release?

1. Straightening of an aluminum propeller blade.
2. Repair of a propeller governor.

- A) 1.
- B) 2.
- C) Both 1 and 2.

36 . IAR031

When may a circuit remain energized with the master switch open? When the circuit

- A) supplies power to emergency equipment.
- B) is an intermittent load of not more than 6 amps.
- C) is rated at 5amps or less and a circuit protective device is adjacent to the power source.

37 . IAR031

Maintenance manuals with an airworthiness limitation section are required to provide which of the following information?

1. Mandatory replacement times of components with life limits.
2. Structural inspection intervals and inspection procedures.

- A) Statement #1.
- B) Statement #2.
- C) Both statements #1 and #2.

38 . IAR030

Airplanes certificated in the normal, utility, and acrobatic category after December 12, 1986 must have

- A) an emergency locator transmitter (ELT) installed and operable.
- B) safety belts and shoulder harnesses installed.
- C) a minimum equipment list (MEL) for installed items.

39 . IAR017

An approved aircraft inspection program could apply to which of the following aircraft?

1. A large 30 passenger turbine-powered helicopter.
2. A 12 passenger commuter category multiengine turbopropeller airplane.

- A) 1.
- B) 2.
- C) Either 1 or 2.

40 . IAR030

The Code of Federal Regulations Title 14 Part 183 allows the Federal Aviation Administration to designate certain persons to develop and approve technical data for alteration and repair of U.S. certificated aircraft. These persons are known as

- A) Designated Engineering Representative.
- B) Designated Airworthiness Representative.
- C) Designated aircraft maintenance inspectors.

41 . IAR031

Helicopters manufactured after September 16, 1992 are required to have

- A) an anti-torque warning light.
- B) safety belts and shoulder harnesses.
- C) an emergency locator transmitter.

42 . IAR030

Federal Aviation Regulations require the inspection of all civil aircraft at specific intervals to determine the overall condition. An amateur-built aircraft with an experimental airworthiness certificate requires what type

- A) Annual inspection.
- B) Condition inspection.
- C) Approved aircraft inspection program.

43 . IAR021

Of the following statements concerning use of manufacturer's service bulletins and compliance with airworthiness directives during an annual inspection, which is true?

- A) Service bulletins always take precedence over airworthiness directives when the aircraft is in the heavy maintenance category.
- B) If there is a conflict between a service bulletin and an airworthiness directive (AD) you should always follow the AD.
- C) Service bulletins are always mandatory when performing required inspections that take precedence over all airworthiness items.

44 . IAR031

Approval of a major repair for return to service may NOT be made by the holder of an inspection authorization unless

- A) the product was repaired by a certificated repairman holding an appropriate rating.
- B) he or she has performed or supervised the performance of a similar repair.
- C) technical data approved by the Administrator was used to accomplish the work.

45 . IAR031

As an inspection authorization, you have been asked to inspect and approve for return to service the relocation of a battery. The specific installation will follow the general guidelines of a Supplemental Type Certificate, with the exception that the battery is located 7 inches aft of the location shown on the Supplemental Type Certificate. The aft center of gravity limit is exceeded by 0.2 inch.

Concerning the installation, which of the following is true?

- A) The deviation to the Supplemental Type Certificate is in itself a major alteration and will require additional approval.
- B) The installation could be approved for return-to-service if an Inspection Authorization inspects and approves the deviation.
- C) The exceeding of the aft center-of-gravity by 0.2. inch is shown to be negligible by AC43.13-2A and may be approved as a minor alteration.

46 . IAR031

Federal Aviation Regulation Part 43 contains several appendixes that deal with maintenance, inspection, repair, alteration, and recordation. Which specifies various alterations, the performance of which is a major alteration?

- A) Appendix A.
- B) Appendix B.
- C) Appendix C.

47 . IAR002

After a major repair that increased the structural weight of the airframe, a new empty weight and center of gravity were calculated. To ensure the airplane has acceptable flight characteristics, a maximum forward and rearward center of gravity check was made. If the repair has been properly completed, when the aircraft is loaded for the extreme rearward check, the center of lift will be

- A) located behind the center of gravity.
- B) coincidental with the center of gravity.
- C) located forward of the center of gravity.

48 . IAR002

For most airplanes, if the center of gravity is located at 25% of the mean aerodynamic chord, the center of lift will

- A) be forward of the center of gravity.
- B) coincide with the center of gravity.
- C) be behind the center of gravity.

49 . IAR008

Following a major repair to Piper PA28-180, serial number 28-7205222, a new empty weight and empty weight center of gravity (EWCG) was calculated. It was 1178 pounds and EWCG of 90.5 inches. For a flight test the following useful load will be placed on the airplane. What category(ies) may flight maneuvers be conducted in?

Useful load:

Pilot = 110 pounds.

Passenger = 198 pounds.

Fuel = 50 gallons.

Oil = 8 quarts

- A) Utility.
- B) Normal only.
- C) Utility and normal.



A major alteration has been completed to the empennage of a light-twin engine airplane. Additional reinforcement was added at +355 inches, weighing 20 pounds. Working as the holder of an inspection authorization, you examine the weight and balance condition using the following information.

If the items of useful load listed below are placed on the aircraft, the aircraft would

Two pilots weighing a total of 380 pounds at +95 inches.

Baggage weighing 200 pounds at +110 inches.

Minimum fuel weighing 350 pounds at +125.8 inches.

Known information (before repair)

Empty weight 4855 pounds.

Empty weight center of gravity +124.13 inches.

CG range

(+126.0) to (+135.0) @ 7000 pounds.

(+122.0) to (+135.0) @ 6200 pounds.

(+120.0) to (+135.0) @ 5200 pounds.

- A) require ballast.
- B) exceed the rearward CG limit.
- C) be within the loaded CG limits.