Question block created by wizard

This exam contains 72 questions.

1. Which property of steel will improve, if there is an alloy formed between steel and molybdenum?

a. Heat resistance.
b. Heat- and corrosion resistance .
c. Corrosion resistance.

2. Plain carbon steel owes its properties to the presence of....

a. stainless steel.
b. alloy abilities to be heated.
c. carbon.

3. When steel is cold - worked, hammered, bent, rolled, stresses and strain are set up and its crystal structure is disturbed.

The metal becomes....

a. harder, stiffer and stronger.
b. soft.
c. flexible and strong.

4. When Carbon steel is heated to a temperature a little above its upper critical point, then cooled by large water soaking. This process is described as?

a. Annealing
b. Hardening
c. Tempering.

5. Rotating fatigue test machines vary in design, but are generally based around the....

a. Macqueen principle.
b. Wohler principle.
c. Scleroscope principle.

6. What type of test is performed, if a material is subjected to repeated or cyclic stress ?

a. Static test.
b. Fatigue strength test.
c. Flexibility test.

7. The impact tests are normally carried out at a temperature of....

a. 25 ºC.
b. 20 ºC.
c. 15 ºC.

8. The ability of a material to resist elastic deformation when subjected to stress is described as....

a. hardness.
b. rigidity.
c. tongue and groove.

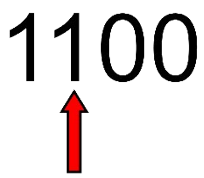
9. What is the name given to a range of alloys using tin, copper, antimony and lead?

a. Tin.
b. White Metal.
c. Zinc.

10. Which metal is mainly an alloy of tin and lead?

a. Soft solder.
b. Gold.
c. Copper.

11. What does the second digit of the material-code of non-ferro materials indicate?



a. The number of modifications.
b. % Basic alloy element.
c. Solid material

12. When adding copper as an alloying element to aluminium. What is the group of these aluminium alloys?

a. 2xxx alloys.
b. 6xxx alloys.
c. 7xxx alloys.

13. Three primary methods by which hardness can be measured are....

a. Brinell - Vickers - Ford.
b. Brinell - Vickers - Rockwell.
c. Brinell - Ford - Rockwell.

14. What is made by firing clay and is used in high temperature applications?

a. ceramic.
b. aramid fibre.
c. carbon fibre.

15. What is one of the primary advantages of plastic?

a. Lack of strength.
b. Vibration dampening.
c. Low stiffness

16. Why do we use sealant?

a. As a ground layer for paint.
b. To prevent crevice or contact corrosion.
c. To stick parts together.

17. Adhesive joints are liable to experience what main types of stress?

a. Vibration and Peeling.
b. Compression.
c. Tensile, Shear, Cleavage and Peel.

18. There are a variety of non-destructive inspection techniques on composites available to help determine the extent and degree of damage.

What is the most common inspection technique?

a. Tap test.
b. Destructive coupon.
c. Floatation testing.

19. After paint removal, additional damage assessment is performed, because the hidden damage now becomes more apparent.

What must be done?

a. Internal damage is allowed but limited to 20 percent.
b. A tap test has to be performed.
c. All damaged material must be removed and repaired in accordance with SRM.

20. What is a property of hard wood?

a. High density and wood fibres are thick.
b. Low density and wood fibres are thin-walled.
c. High density and the wood is coarser.

21. Whenever possible, a wooden aircraft should be kept in a....

a. wet, well-ventilated hangar.
b. temperature controlled hangar only.
c. dry, well-ventilated hangar.

22. Inspection access is provided to every control bell cranks, drag-wire junction, cable guide, pulley, wing fitting. These access points are referred to as....

a. fabric windows.
b. metal stress plates.
c. inspection rings.

23. Fabric openings that cannot be repaired by closing with stitches may be repaired....

a. by replacement of the complete skin fabric surface.
b. with a new fabric section.
c. with a wooden insert.

24. The term oxidation is used to describe the direct reaction of metal with....

a. water vapour.
b. oxygen.
c. chemical agents.

25. Pure water has....

a. the same conductivity as salt water.
b. a higher conductivity than salt water.

c. a lower conductivity than salt water.

26. How do we call the kind of corrosion between two different metals in contact with each other and where moisture is present?

a. Exfoliation corrosion.
b. Inter-granular corrosion.
c. Dissimilar metal corrosion.

27. What type of corrosion develops if a steel bolt is in contact with an aluminium alloy?

a. Galvanic corrosion.
b. Exfoliation corrosion.
c. Fretting corrosion.

28. Which will affect the rate of corrosion the most?

a. High altitude and cold.
b. Dry, high temperature environment.
c. Moisture loaded atmosphere.

29. What is an extremely corrosion-resistant material?

a. Titanium.
b. Aluminium.
c. Mercury.

30. What is the most common and easily recognisable form of iron corrosion?

a. Rust due to hammer strikes.
b. Red rust.
c. Grey rust.

31. What is the best corrosion protection for aircraft structures?

a. Good protective coating.
b. Alloys used in hardening process.
c. Cleaning on daily basis.

32. The grip of a fastener is the....

a. untreaded portion.

b. nominal length.
c. treaded portion.

33. A standard hexagonal nut with a plastic insert is....

a. a term used to describe a lock nut which has a prevailing torque.
b. a nyloc nut.
c. a fastener snap nut.

34. The left hand thread of a bolt means a....

a. thread that which is formed in holes, such as in nuts.
b. bolt that can be screwed in by rotating clockwise.
c. bolt that can be screwed in by rotating counter clockwise.

35. What is the thread angle of the British standard Whitworth thread?

a. 60°
b. 55°
c. 50°

36. Why is the AN-number for bolts used?

To give the type and....

a. length of the bolt.
b. diameter of the bolt.
c. thread of the bolt.

37. Aircraft bolts may be made of....

a. non alloyed aluminium.
b. HTS corrosion resistant steel or aluminium alloy.
c. plain steel.

38. An aerotight stiffnut has....

a. no slots.
b. 2 slots.
c. 8 slots.

39. Studs are threaded....

a. at one end
b. in the middle section
c. at both ends

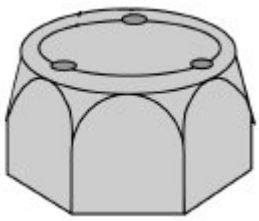
40. Self-tapping screws have....

a. no threads
b. a blunt pointed thread
c. a sharp pointed thread

41. Quick-release pins are used in assemblies where it is necessary to....

a. secure the airplane.
b. make a wire connection with a component.
c. rapidly remove or reposition components.

42. Peening is sometimes applied to nuts and bolts (see figure below). Why is this?



a. To indicate which number the nut has.
b. To prevent the nut from loosening itself.
c. To mark where the nut should be.

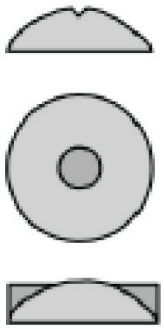
43. Dzus fastener are locked or unlocked by a....

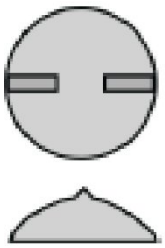
a. half turn of the stud.
b. quarter turn of the stud
c. full turn of the stud.

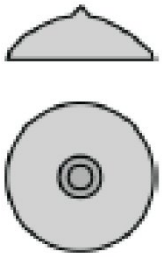
44. The angle of approach of lock-wire should....

a. be less than 35 degrees
b. not be less than 45 degrees
c. be less than 45 degrees

45. Which figure shows an AD nail?

a. 

b. 

c. 

46. A rivet is flat topped and bevelled towards the shank so that it can be installed into a countersunk or dimpled hole and so be flush with the materials surface.

What type of rivet is this?

a. Brazier head.
b. Universal head.
c. Countersunk head.

47. In what kind of force it is best to use a rivet?

a. Pressure forces.
b. Shear forces.
c. Tension forces.

48. Fuel lines colour code identification is....

a. green.
b. yellow.
c. red.

49. Low pressure hoses are used in....

a. hydraulic systems.
b. flexible pipes.
c. vacuum systems.

50. Replacement fluid lines must be of the same....

a. material as the original line.
b. size and material as the original line.
c. size as the original line.

51. Flexible hose swaged fittings....

a. cannot be re-used.
b. have a quick release poppet.
c. can be re-used.

52. Where are flared-tube fittings made of?

a. A magnesium alloy.
b. A steel or copper based alloy.
c. An iron alloy.

53. What is the Leaf or Carriage spring?

a. 

b.

c.

54. The length of the spring <u>without any load applied</u> is referred as....

a. pitch.
b. free length.
c. coil distance.

55. Roller bearings are....

a. cylindrical, tapered or spherical rollers running in suitably shaped tracks.
b. balls, sometimes caged, which rotate in grooved tracks.
c. allow only one direction but they are similar to balls of steel.

56. Which of the following factors must be taken in consideration in the selection of the correct type of bearing for any particular part of a transmission system?

a. Oxygen level.
b. Altitude of operation.
c. Bearing life.

57. What type of bearings are used on high speed propellor shafts where stringent demands are made on accuracy?

a. Cone bearing.
b. Double row angular ball thrust bearings.
c. Roller.

58. What is the main function of thrust bearings?

They are used...

a. for heavy axial loads at low speed.
b. for axial and radial loads.
c. for radial loads at high speed.

59. Gears are named according to their....

a. purpose; example drive gear.
b. angle of intersection of the axis and the shape of their teeth.
c. size and shape of their driving source.

60. What is the most important difference between ordinary and epicyclical gear trains?

a. Direction of rotation, an epicyclical is clockwise and an ordinary is anti-clockwise.
b. Speed of rotation, is high on ordinary gear trains and low on epicyclical.
c. Input- and output axis of epicyclical are on the same centerline.

61. What is the direction of rotation if there is one idler gear between two gears?

a. Clockwise.
b. Counter clockwise.
c. The same.

62. Which flight controls are operated with chain and sprockets?

a. Aileron trim
b. Flap screw drives
c. Main Landing Gear extension

63. Pulleys in aircraft control systems are usually made from....

a. resin impregnated fibres.
b. high strength aluminium alloys.
c. 0 steel alloys with round holes to reduce weight as much as possible.

64. Whilst control cables were previously, 'spliced' or 'whipped' to form end-fittings, the majority of modern cables have a....

a. adjustable nut fitting
b. looped terminal

c. swaged splice end-fitting

65. Control cables that run for long distances inside an aircraft, will need to change direction to allow for complicated structure. The usual method used to change direction are better known as?

a. Frames
b. Guides
c. Pulleys

66. The Bowden system of control consists of....

a. stainless steel cable used direct spans and with only push function ability.
b. non-flex cable system.
c. a stainless steel wire, housed in a flexible sleeve or conduit.

67. A conductor composed of a group of single solid wires stranded together to provide greater flexibility and enclosed by insulating material and outer protective covering.

This best describes....

a. an electrical cable.
b. an electrical wire.
c. a coaxial cable.

68. Shielded ignition cables are used in aircraft installations where the electromagnetic radiation from the high-voltage spark plug leads could cause radio interference.

What is the best type of cable to connect the sparkplugs?

a. Coaxial cable
b. Solid wire
c. High tension cable

69. What is the most common electrical connection of wiring in modern aircraft?

a. Swaged connections.
b. Soldered connections.
c. Crimped connections.

70. The precise form of the crimp for flexible wires is determined by factors as the....

a. weight and construction of the conductor.
b. size and construction of the conductor.
c. type of wire and construction of the conductor.

71. How can you detect the difference between front or rear release connectors?

a. Insulator of a front release is made of soft material.
b. Insulator of a rear release is made of soft material.
c. Insulator of a front release is made of hard material.

72. Explain the identification of the connector part number: MS24266 R 22 B 55p.

a. Aluminium connector, shell size and bayonet coupling type.
b. Stainless steel connector, shell size 22 and threated coupling type.
c. Titanium connector with 22 connector pins and a bayonet coupling type.