Question block created by wizard

This exam contains 72 questions.

1. During flight (no-fault conditions) the EICAS system displays on the lower CRT....

o (a) synoptic display.
o (b) flight phase page.

• (c) secondary engine parameters.

If choice c is selected set score to 1.

2. Which display in a glass cockpit shows the data of aircraft systems and engines?

• (a) ECAM

o (b) EADI
o (c) FMS

If choice a is selected set score to 1.

3. What instrument includes a display of a rising runway?

• (a) PFD

o (b) EHSI
o (c) ECAM

If choice a is selected set score to 1.

4. A CRT display has the advantage over an LCD display by....

• (a) large viewing angle.

o (b) brighter clearer output.
o (c) more energy efficient.

If choice a is selected set score to 1.

5. What is the value of $342_{(8)}$ in the decimal system?

o (a) $30_{(10)}$
o (b) $22_{(10)}$

• (c) $226_{(10)}$

If choice c is selected set score to 1.

6. Convert $011101_{(2)}$ to Octal.

- (a) 35

o (b) 25
o (c) 33

If choice a is selected set score to 1.

7. $101_{(2)}$ converted to decimal is?

o (a) $2_{(10)}$
o (b) $5_{(2)}$

- (c) $5_{(10)}$

If choice c is selected set score to 1.

8. Convert decimal 15 into binary.

- (a) 1111

o (b) 1110
o (c) 1101

If choice a is selected set score to 1.

9. Convert the hexadecimal number D into decimal.

o (a) 14

- (b) 13

o (c) 15

If choice b is selected set score to 1.

10. Calculate: $1100001_{(2)}$ - $101100_{(2)}$ = ...(2)

o (a) $110111_{(2)}$

- (b) $110101_{(2)}$

o (c) $10001101_{(2)}$

If choice b is selected set score to 1.

11. What can you say about Analogue Computers?

o (a) They are specialized digital computers for handling analogue signals.

- (b) They are not used in modern aircraft.

- (c) There are two types; one for General purposes and the other for Special purposes.

If choice c is selected set score to 1.

12. A given transducer provides a voltage which corresponds to true heading. This voltage can be converted to 'bits' by using....

- (a) an analogue to digital converter.

- (b) a digital to analogue converter.
- (c) a commutator.

If choice a is selected set score to 1.

13. Within a computer controlled flight system, position feedback is converted from....

- (a) digital to analogue.

- (b) analogue to digital.

- (c) position feedback to rate feedback.

If choice b is selected set score to 1.

14. When the voltage that represents a logic 1 state is less than the voltage that represents a logic 0 state, the logic being used is....

- (a) either positive or negative.
- (b) positive.

- (c) negative.

If choice c is selected set score to 1.

15. An analogue to digital converter is as accurate as the....

- (a) amplitude.

- (b) sampling rate.

- (c) frequency.

If choice b is selected set score to 1.

16. How many bits does the SSM (Sign & Status Matrix) contain in an ARINC429 word?

- (a) 4 bits.
- (b) 8 bits.

- (c) 2 bits.

If choice c is selected set score to 1.

17. What is a parity check?

- o (a) Sending an additional bit in a data-word transmission for bit filling checking .
- o (b) Sending an additional bit in a data-word transmission for synchronisation checking.
- (c) Sending an additional bit in a data-word transmission for error checking.

If choice c is selected set score to 1.

18. What kind of communication is being used by ARINC429?

- o (a) Duplex.
- (b) Simplex.
- o (c) Half duplex.

If choice b is selected set score to 1.

19. What is a "frame" in an Ethernet based network?

This is the basic building block of the....

- o (a) central Ethernet computer in a LAN.
- (b) messages being relayed over the Ethernet.
- o (c) ethernet devices such as computers.

If choice b is selected set score to 1.

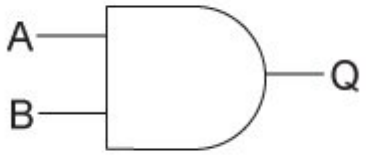
20. What is the function of a "broadcast" in an Ethernet LAN?

This is a message intended for....

- o (a) only one node in the network.
- o (b) a group of nodes in the network.
- (c) all nodes in the network.

If choice c is selected set score to 1.

21. What type of logic gate is shown here?



- (a) OR gate.
- (b) AND gate.
- (c) EXNOR gate.

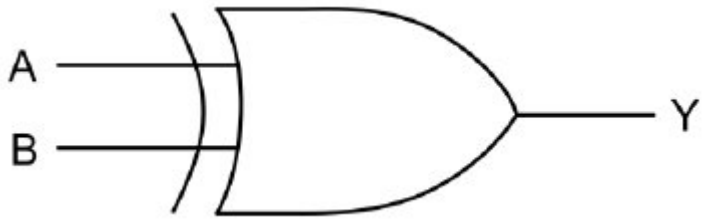
If choice b is selected set score to 1.

22. What is meant by "positive logic"?

- (a) The "1"state = +5 V, the "0"state = -5 V
- (b) The "1"state and the "0"state are equal.
- (c) The "1"state = -5 V, the "0"state = +5 V

If choice a is selected set score to 1.

23. Which truth table belongs to the schematic shown here?



- (a)

A	B	Output
0	0	0
0	1	1
1	0	1
1	1	0

- (b)

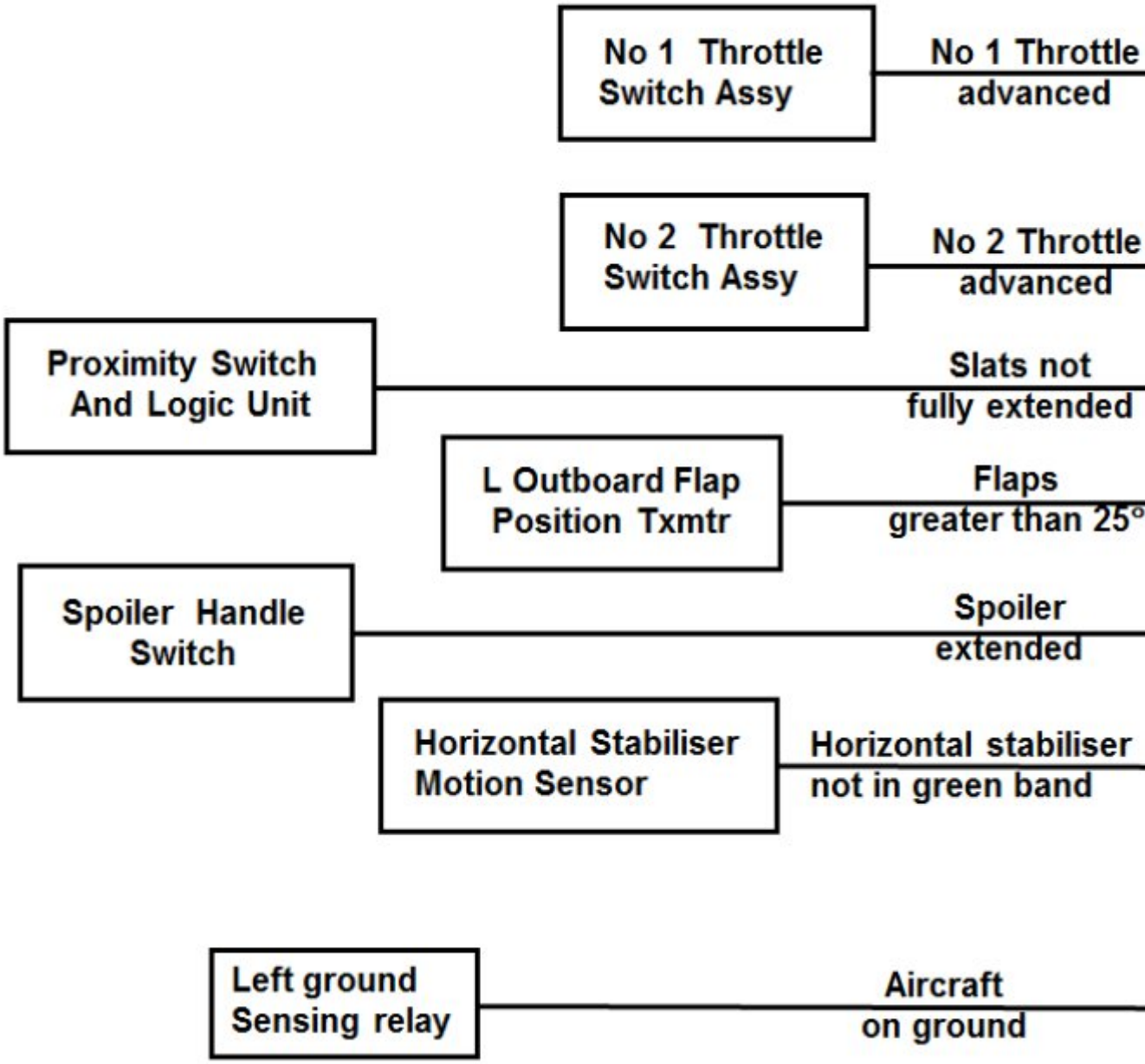
A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

- (c)

A	B	Output
0	0	0
0	1	1
1	0	0
1	1	0

If choice a is selected set score to 1.

24. In which situation is it possible to generate a take-off warning?



- (a) The spoilers are extended in flight.
- (b) Only on the ground.
- (c) If the flap position is greater than 25° in flight.

If choice b is selected set score to 1.

25. A schematic or functional diagram is usually drawn with the inputs.....

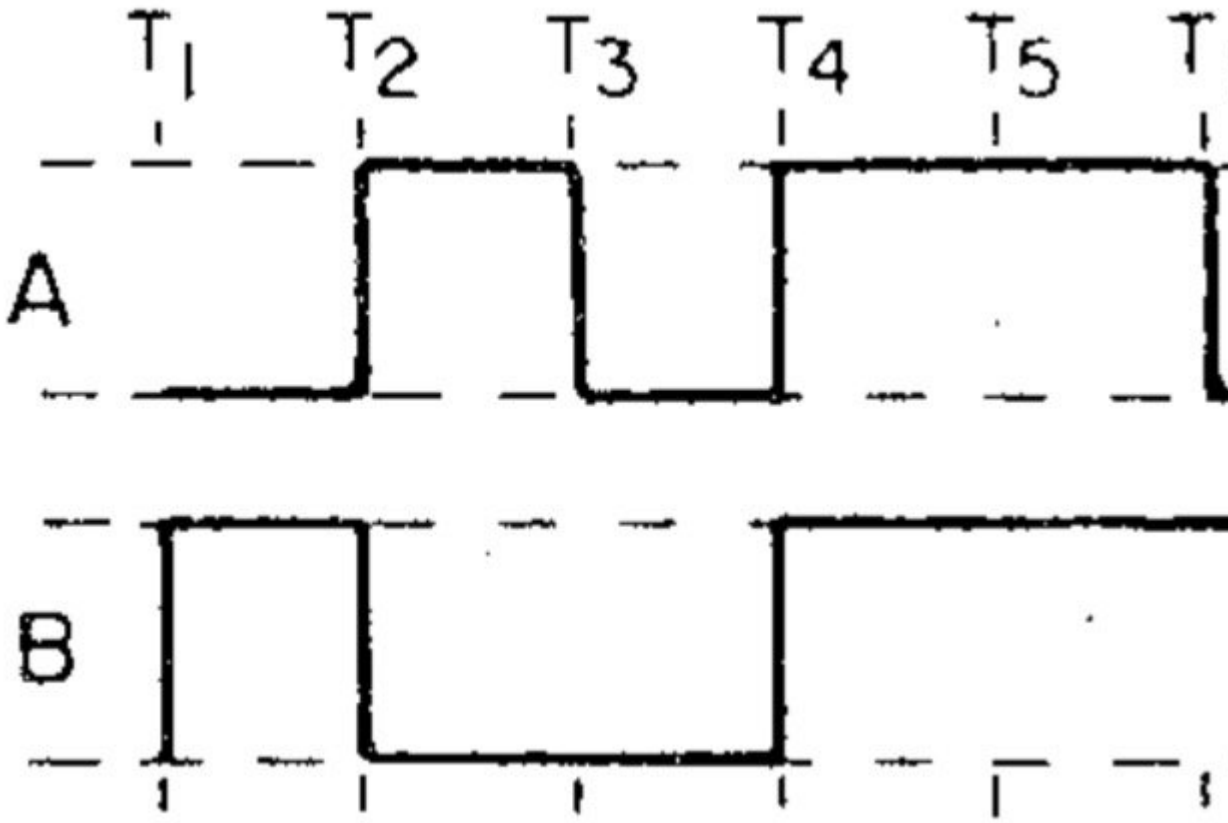
- (a) up and the outputs down.

- (b) left and the outputs right.

o (c) right and the outputs left

If choice b is selected set score to 1.

26. At which of the following times will the output of a two input AND gate go to HIGH? See the figure below.



o (a) T2, T6 and T10
o (b) T2, T5 and T8

- (c) T4, T5 and T9

If choice c is selected set score to 1.

27. The function of a NOT logic gate within a circuit is to....

- (a) invert the input signal such that the output is always of the opposite state.

o (b) ensure the input signal is DC only.
o (c) ensure the output signal is of the same state as the input signal.

If choice a is selected set score to 1.

28. Which of the following logic gates requires all inputs to be 1 (true) at the same time to produce a 1 (true) output?

- (a) AND

o (b) OR
o (c) NOT

If choice a is selected set score to 1.

29. Adding invertors to the two inputs of an AND gate makes....

- (a) a NOR gate

o (b) an OR gate
o (c) a NAND gate

If choice a is selected set score to 1.

30. Which of the following output expression is correct for an AND gate.

- (a) f = A•B

o (b) A = B
o (c) f = A+B

If choice a is selected set score to 1.

31. The first generation of computers available was based on the …. bit microprocessors.

o (a) 4

- (b) 8

o (c) 16

If choice b is selected set score to 1.

32. What is the purpose of the ALU?

- (a) The part of the CPU unit where arithmetic & logic operations are carried out.

o (b) To store data being used by the CPU.
o (c) To convert serial into parallel data.

If choice a is selected set score to 1.

33. A basic computer would consist of....

- (a) memory, input/output ports and CPU.

o (b) register section, ALU and timing and control section.
o (c) RAM/ROM and input/output ports.

If choice a is selected set score to 1.

34. A single address instruction word consists of....

o (a) an OP Code, an operand code and an address.

- (b) an Op Code and an operand address.

o (c) an operand code and an address.

If choice b is selected set score to 1.

35. A byte is....

o (a) a 4 bit word.
o (b) a 16 bit word.

- (c) a 8 bit word.

If choice c is selected set score to 1.

36. Which of the following is a programmed semiconductor memory?

- (a) EPROM.

o (b) DRAM.
o (c) SRAM.

If choice a is selected set score to 1.

37. RAM is used as a short term memory because it is....

- (a) volatile.

o (b) has small capacity.
o (c) programmable.

If choice a is selected set score to 1.

38. The brain of any computer system is....

o (a) ALU
o (b) Memory

- (c) CPU

If choice c is selected set score to 1.

39. The ALU of a computer normally contains a number of high speed storage elements called....

- o (a) hard disk.
- o (b) semiconductor memory.
- (c) registers.

If choice c is selected set score to 1.

40. The ALU of a central processing unit does the essential maths work for the computer. What does the control unit do?

- o (a) activates the output devices.
- (b) monitors the flow of information.
- o (c) communicates its results.

If choice b is selected set score to 1.

41. Which of the following registers is loaded with the contents that is currently being executed by the PC?

- o (a) Memory Data Register.
- o (b) Memory Address Register.
- (c) Instruction Register.

If choice c is selected set score to 1.

42. Is it allowed that 2 digital inputs of an encoder are on high level at the same time?

- o (a) Yes, that is allowed but only the entry with the highest priority determines what the output will be.
- o (b) Yes, that is allowed and the addition of both inputs determines what the output will be.
- (c) No, this situation is not allowed with encoders.

If choice c is selected set score to 1.

43. How do we call the component where for each digital input combination only one output line is activated?

- o (a) Repeater.
- o (b) Multiplexer.
- (c) Decoder.

If choice c is selected set score to 1.

44. An encoder changes....

- o (a) digital to analogue.
- o (b) analogue to digital.
- • (c) data from one format to another.

If choice c is selected set score to 1.

45. Very Large Scale Integrated (VLSI) means the number of gates in a single IC is....

- o (a) up to 10,000
- • (b) over 100,000
- o (c) Approximately 1000

If choice b is selected set score to 1.

46. The sharing of a medium and its link by two or more devices, sharing data, is called ….

- • (a) multiplexing.
- o (b) modulation.
- o (c) encoding.

If choice a is selected set score to 1.

47. A multiplexer....

- o (a) takes one signal in and converts it to a parallel transmission output.
- o (b) takes many signals in and puts these in a parallel transmission on the output.
- • (c) takes many signals in and converts it to a serial transmission output.

If choice c is selected set score to 1.

48. How many Data select lines does an 8 data input multiplexer have?

- o (a) 2
- o (b) 8
- • (c) 3

If choice c is selected set score to 1.

49. What is the advantage of a single fibre optic cable over a copper wire?

- o (a) Small bend radius.

- o (b) No insulation or coating required.

- (c) Large bandwidth.

If choice c is selected set score to 1.

50. A fibre optic data bus used on an aircraft....

- (a) can transmit on several channels at the same time.

- o (b) can send only one message at a time.
- o (c) connects non-essential systems only.

If choice a is selected set score to 1.

51. Which of the following types of rays is a "skew ray"?

- o (a) A meridional ray.
- o (b) An unbalanced ray.

- (c) A ray that propagates without passing through the centre axis of the fibre.

If choice c is selected set score to 1.

52. The light source of a Single Mode fibre has....

- o (a) a bandwidth in the visible light area.
- o (b) lower bandwidth than visible light.

- (c) higher bandwidth than visible light.

If choice c is selected set score to 1.

53. What is an active fibre optic coupler?

- (a) Active fibre optic coupler split or combine the signal electrically and use fibre optic detectors and sources for input and output.

- o (b) An active fibre optic coupler reinforces the optical signal, so the distance the light can travel will be much longer.
- o (c) An active fibre optic coupler acts like a switch, it can block the optical signal or let it through.

If choice a is selected set score to 1.

54. Most fibre optic connectors are designed so

- o (a) the connector cannot be replaced on the aircraft.

- (b) the connectors cannot be over tightened.

- (c) the receptacle has to torque to a designated torque to ensure correct alignment.

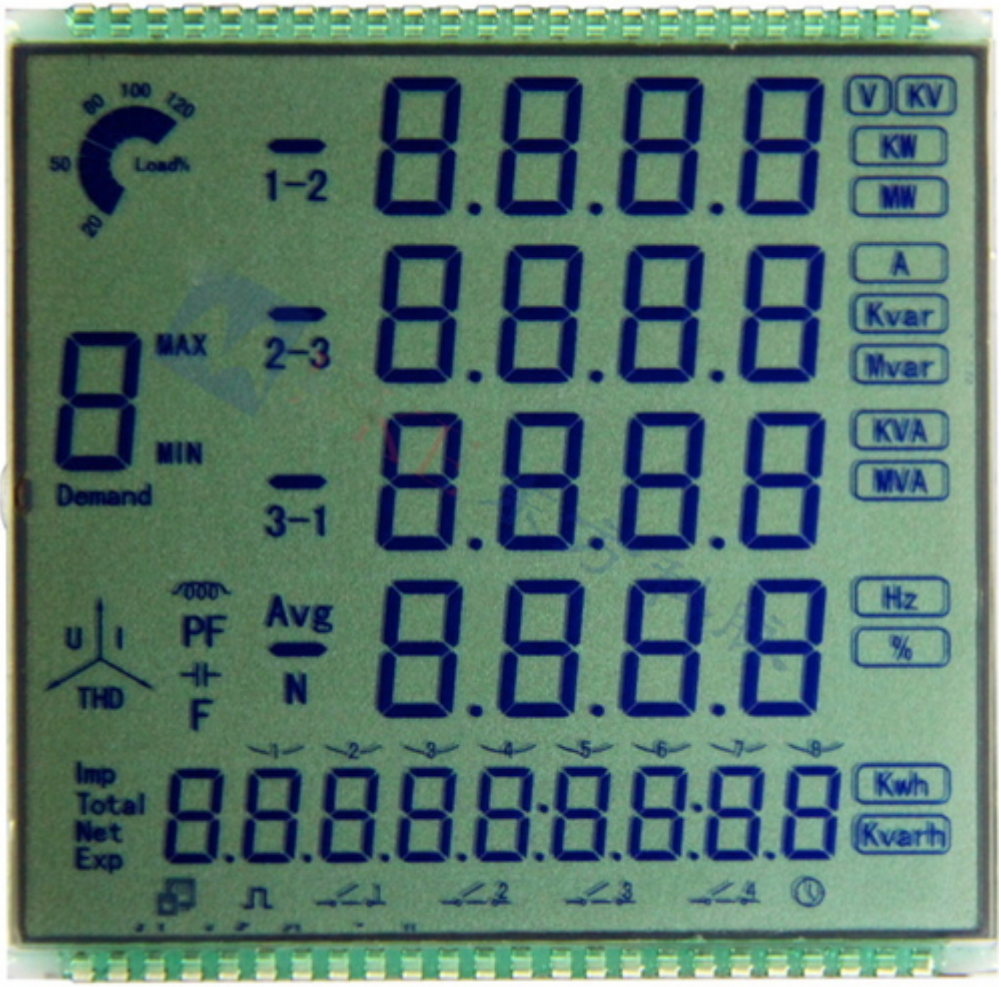
If choice b is selected set score to 1.

55. What type of display is shown here?

- (a) This is a matrix display.
- (b) This is a starburst display.
- (c) This is a 12-segment display.

If choice b is selected set score to 1.

56. What type of display is shown here?



o (a) A CRT display.
o (b) A video display.

- (c) An alpha-numeric display.

If choice c is selected set score to 1.

57. What driving method prevents a lot of connections when using many equipment?

o (a) Connection striping.

- (b) Multiplexing.

o (c) Demultiplexing.

If choice b is selected set score to 1.

58. How are ESD sensitive devices marked?

- o (a) By a yellow label with red text that warns to use precautions when handling.
- o (b) By a black label with yellow text that warns to use precautions when handling.
- • (c) By a yellow label with black text that warns to use precautions when handling.

If choice c is selected set score to 1.

59. What is the best precaution to prevent Electro Static Damage?

- o (a) To use a special workbench with non-static covering.
- • (b) To use a grounded wrist-wrap protection.
- o (c) To un-charge yourself by touching a metal part of the casing you are working on.

If choice b is selected set score to 1.

60. How is the edge connector of an electronic PCB protected for ESD?

- • (a) A specially formed strip called a shunt is used.
- o (b) A special connector with short-circuited leads is used.
- o (c) A plastic bag that exactly fits the board is used.

If choice a is selected set score to 1.

61. What is a danger of ESD induced damage?

- o (a) This can cause electrical injuries to crew and passengers.
- o (b) This may cause physical problems for the maintenance engineer.
- • (c) This can degrade a unit or device, which can eventually fail.

If choice c is selected set score to 1.

62. Which failure level has a catastrophic result caused by a software problem?

- • (a) Level A
- o (b) Level C
- o (c) Level B

If choice a is selected set score to 1.

63. What is a guidance for avionics software development and certification?

- o (a) The Aircraft Maintenance Manual (AMM)
- o (b) The aircraft Minimum Equipment List (MEL)

- (c) Document DO-178/ED-121

If choice c is selected set score to 1.

64. May the User Modifiable Software (UMS) be modified by the aircraft operator?

- o (a) Never during the flight.
- o (b) Yes, only with review by the Civil Aviation Authority (CAA).

- (c) Yes, without review by the Civil Aviation Authority (CAA).

If choice c is selected set score to 1.

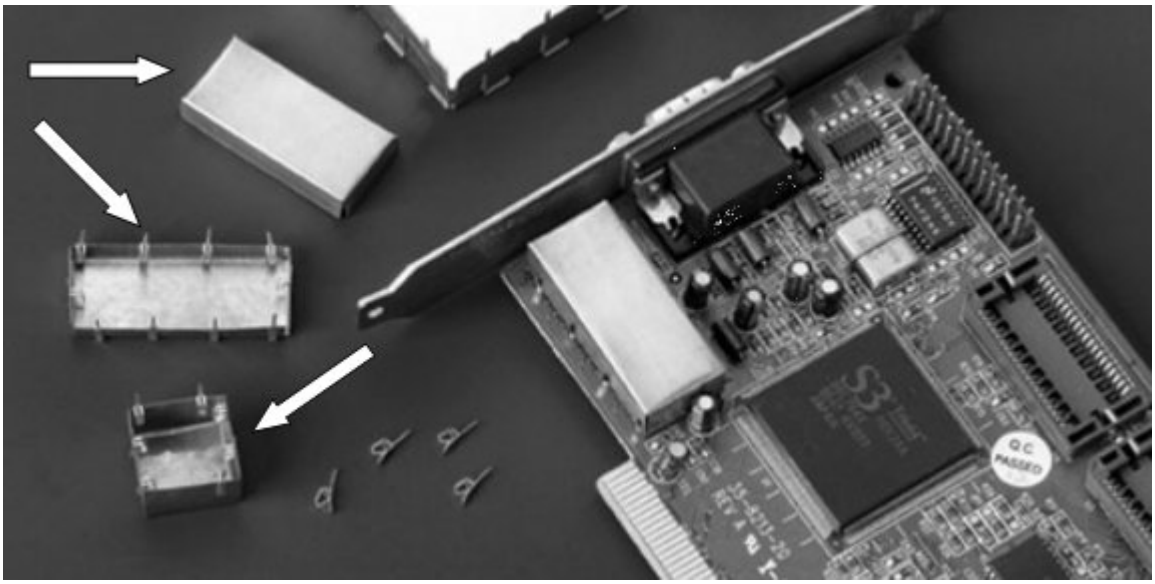
65. What type of EMC can interfere with an unbalanced circuit?

- o (a) Only capacitive pickup.
- o (b) Only inductive pickup

- (c) Both inductive and capacitive pickup.

If choice c is selected set score to 1.

66. Looking at this picture, how are the copper boxes named?



- (a) Shielding

- o (b) EMD boxes
- o (c) Bonding cages

If choice a is selected set score to 1.

67. How is the static charge caused by lightning fed through the aircraft?

- (a) By using bonding strips to conduct the high currents, preventing serious damage.

- o (b) By use of special surge protection devices, that short-circuit the generated current.
- o (c) By the use of static dischargers on preferred exit points, like the wingtips.

If choice a is selected set score to 1.

68. In which direction is ACARS information transmitted?

- (a) Both directions are used, because it is a communication system..

- o (b) From air to ground only, because it transmits aircraft data.
- o (c) From ground to air only, because it is an information service.

If choice a is selected set score to 1.

69. If the auto-pilot is on, what is the action of an FMS when the actual course deviates from the programmed course?

It will immediately....

- (a) take action and send a steering command to the autopilot.

- o (b) inform the pilot to take action to correct the deviation.
- o (c) take action and correct the aircraft heading by steering the aircraft.

If choice a is selected set score to 1.

70. What does mode-C mean on a transponder?

The transponder sends also....

- o (a) vertical speed information.

- (b) altitude information.

- o (c) airspeed information.

If choice b is selected set score to 1.

71. One of the benefits of Integrated Modular Avionics (IMA) is lower weight. This is accomplished by.....

- o (a) using less aircraft systems.

- (b) using less Line Replaceable Units (LRU's)

- o (c) using lighter materials for avionics.

If choice b is selected set score to 1.

72. What is a BITE ?

- (a) 8 Bits
- (b) Boeing Interface Test Equipment
- (c) Build In Test Equipment

If choice c is selected set score to 1.

If assessment score is 75% to 100% Pass
If assessment score is 0% to 74% Fail