Question block created by wizard

This exam contains 72 questions.

1. EICAS provides the....

- (a) engine parameters and system warnings only.

o (b) engine parameters only.
o (c) engine parameters and engine warnings only.

If choice a is selected set score to 1.

2. Engine parameters are displayed on....

o (a) FMS CDU
o (b) EHSI

- (c) ECAM

If choice c is selected set score to 1.

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

o (a) EHSI

- (b) PFD

o (c) ECAM

If choice b is selected set score to 1.

4. On an EFIS system the weather radar is displayed on the....

- (a) EHSI.

o (b) EADI.
o (c) FMC CDU.

If choice a is selected set score to 1.

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

- (a) $226_{(10)}$

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

If choice a is selected set score to 1.

6. Convert 2C hex to octal.

- o (a) 44
- o (b) 35
- • (c) 54

If choice c is selected set score to 1.

7. Convert the binary word 1110 to decimal.

- o (a) 12
- • (b) 14
- o (c) 15

If choice b 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 hexadecimal 1D to binary.

- o (a) 29
- • (b) 11101
- o (c) 101001

If choice b is selected set score to 1.

10. Calculate: $1101_{(2)} + 101101_{(2)} = \ldots\ldots\ldots_{(10)}$

- o (a) 70
- o (b) 61
- • (c) 58

If choice c is selected set score to 1.

11. What can you say about Analogue Computers?

- o (a) They are, even today, more accurate than digital computers.

- (b) They are still used in modern aircraft.

o (c) They are all replaced by digital computers with ADC and DAC convertors.

If choice b 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.

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

If choice a is selected set score to 1.

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

o (a) position feedback to rate feedback.

- (b) analogue to digital.

o (c) digital to analogue.

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) negative.

o (b) positive.
o (c) either positive or negative.

If choice a is selected set score to 1.

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

- (a) sampling rate.

o (b) frequency.
o (c) amplitude.

If choice a is selected set score to 1.

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

- (a) 2 bits.

o (b) 8 bits.
o (c) 4 bits.

If choice a is selected set score to 1.

17. What is a parity check?

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

If choice b is selected set score to 1.

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

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

If choice a is selected set score to 1.

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

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

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

If choice a is selected set score to 1.

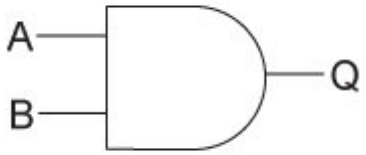
20. What is the function of a "broadcast" in an Ethernet LAN?

This is a message intended for....

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

If choice b is selected set score to 1.

21. What type of logic gate is shown here?



- (a) AND gate.

o (b) EXNOR gate.
o (c) OR gate.

If choice a is selected set score to 1.

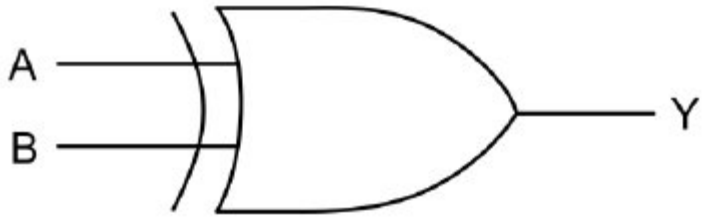
22. What is the Boolean expression for an "and gate"?

o (a) A+B+C
o (b) A-B-C

- (c) A·B·C

If choice c 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)

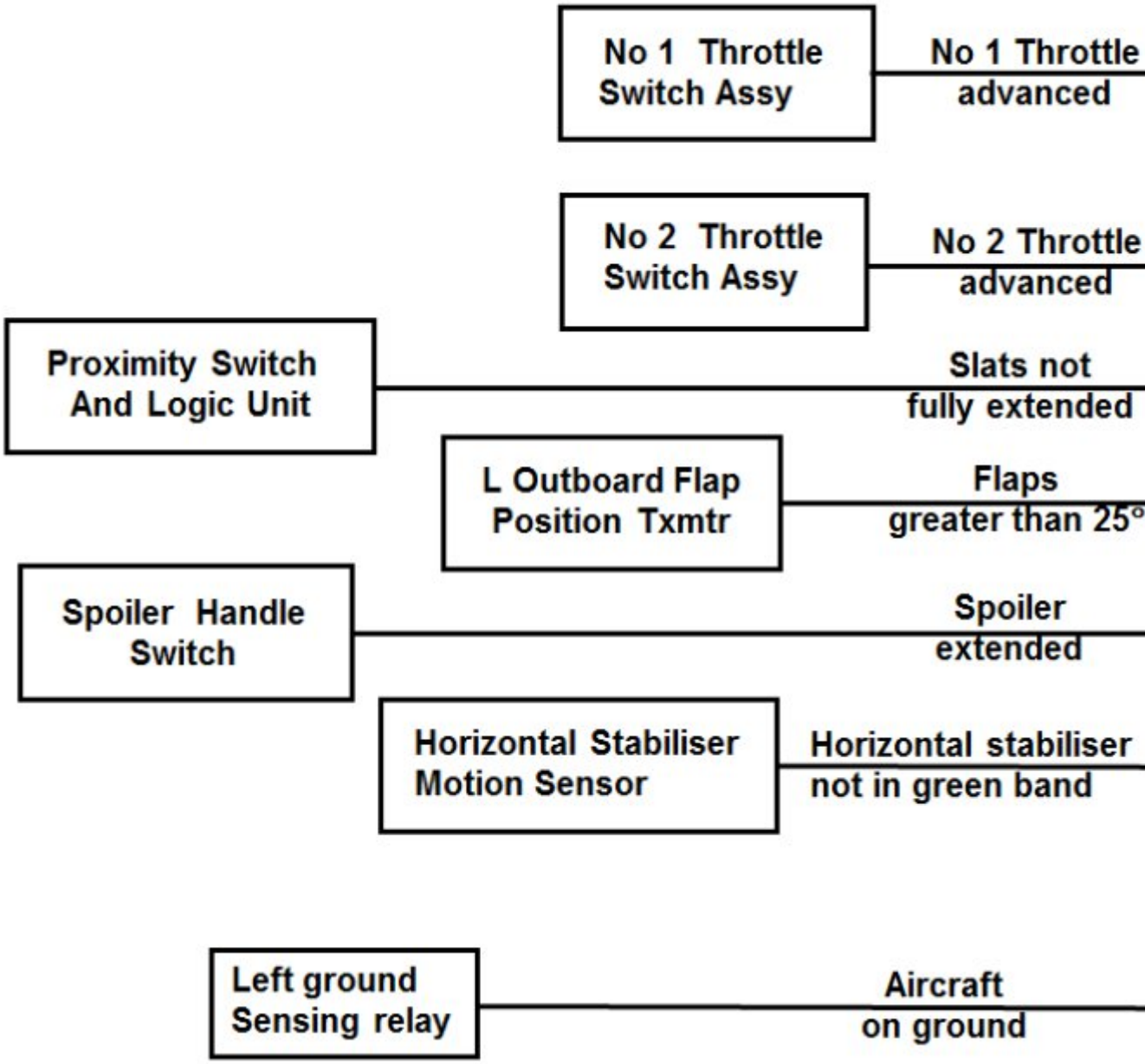
A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

- (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) If the flap position is greater than 25° in flight.

- (c) Only on the ground.

If choice c is selected set score to 1.

25. What is a tristate device?

This is....

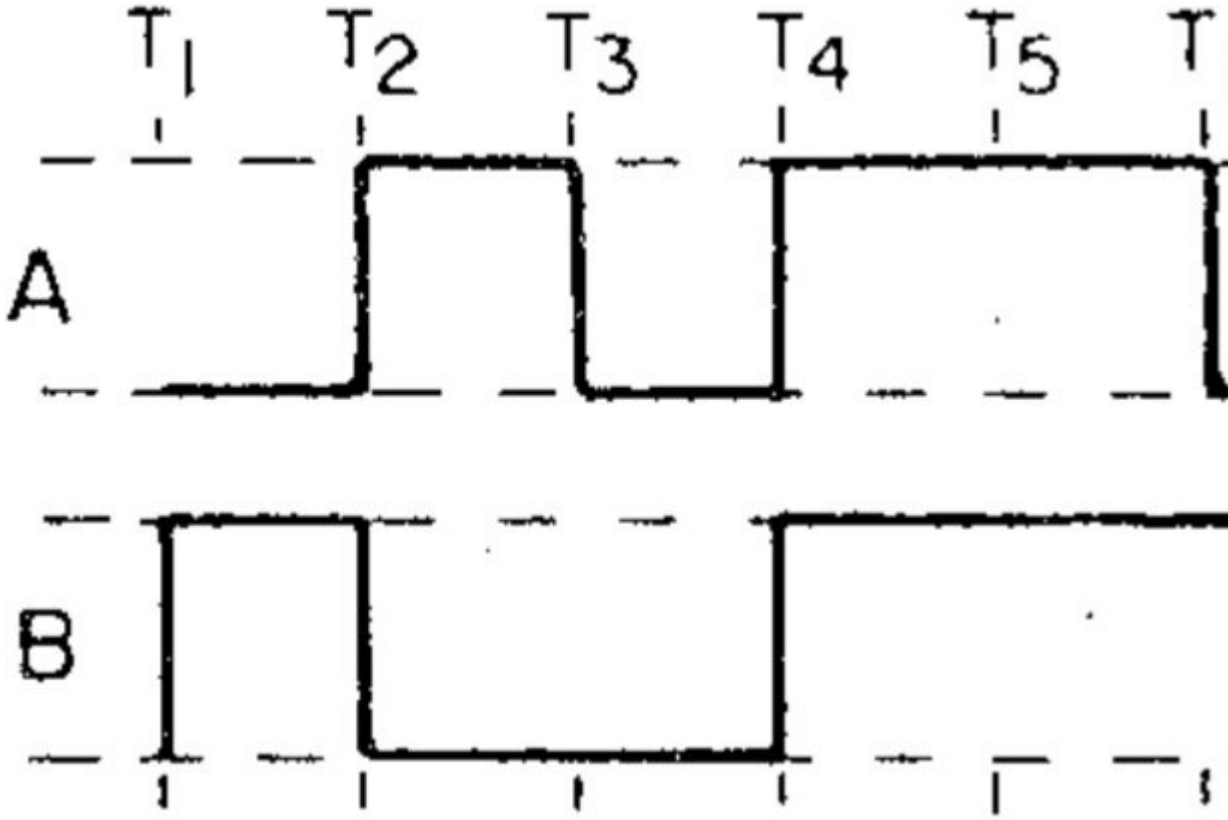
- (a) a logic device that has three different voltage values on its output.

o (b) a device that has the following three states: ON, OFF and UNKNOWN.

- (c) a logic device that has the logic levels "0" and "1", and a level called Hi-Z

If choice c 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....

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

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

If choice c 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?

o (a) NOT
o (b) OR

- (c) AND

If choice c is selected set score to 1.

29. Which of the following gates produces a HIGH (1) output when any or all of the inputs are LOW (0)?

- (a) NAND

o (b) OR
o (c) NOR

If choice a is selected set score to 1.

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

o (a) A = B

- (b) f = A•B

o (c) f = A+B

If choice b is selected set score to 1.

31. The device that can both feed data into and accept data from a computer is

o (a) ALU
o (b) CPU

- (c) input-output device.

If choice c is selected set score to 1.

32. What is the purpose of the ALU?

o (a) To convert serial into parallel data.

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

o (c) To store data being used by the CPU.

If choice b is selected set score to 1.

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

- o (a) register section, ALU and timing and control section.
- • (b) memory, input/output ports and CPU.
- o (c) RAM/ROM and input/output ports.

If choice b is selected set score to 1.

34. A group of bits transmitted at the same time is....

- o (a) a clock signal.
- • (b) parallel data.
- o (c) serial data.

If choice b is selected set score to 1.

35. A byte is....

- • (a) a 8 bit word.
- o (b) a 16 bit word.
- o (c) a 4 bit word.

If choice a is selected set score to 1.

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

- o (a) SRAM.
- o (b) DRAM.
- • (c) EPROM.

If choice c is selected set score to 1.

37. What is the advantage of EPROM over fusible link in a PROM?

- • (a) can be re-programmed.
- o (b) cheaper to produce.
- o (c) does not need refreshing.

If choice a is selected set score to 1.

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

- o (a) Memory

- (b) CPU

o (c) ALU

If choice b is selected set score to 1.

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

- (a) registers.

o (b) semiconductor memory.
o (c) hard disk.

If choice a is selected set score to 1.

40. Where is the program and data located before the ALU and control unit of a computer can operate on it?

o (a) secondary memory.

- (b) Internal memory.

o (c) microprocessor.

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 possible that 2 outputs of a decoder are on high level at the same time?

o (a) Yes, that is possible and it depends on the digital input value.

- (b) No, this is not possible with a decoder.

o (c) Yes, this situation is temporary possible at the moment that the input value changes.

If choice b is selected set score to 1.

43. BCD to seven segment is a....

- (a) decoder

o (b) encoder

- (c) comparator

If choice a is selected set score to 1.

44. An encoder changes....

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

If choice b is selected set score to 1.

45. What is the number of transistors in a VLSI (Very Large Scale Integration)?

- (a) Approximately 100
- (b) Approximately 1000
- (c) More than 100.000

If choice c is selected set score to 1.

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

- (a) Duplexing.
- (b) Multiplexing.
- (c) Mixing.

If choice b is selected set score to 1.

47. A multiplexer....

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

If choice b is selected set score to 1.

48. How many address lines would be needed for an 8 line MUX?

- (a) 3
- (b) 4
- (c) 2

If choice a is selected set score to 1.

49. What is the main disadvantage of a fibre optic cable compared to a copper cable?

- o (a) Less strong and durable when compared to twisted pair and coaxial cable.
- • (b) Bend radius.
- o (c) Fibre optic cables are more expensive.

If choice b is selected set score to 1.

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

- o (a) can send only one message at a time.
- • (b) can transmit on several channels at the same time.
- o (c) connects non-essential systems only.

If choice b is selected set score to 1.

51. What fibre mechanisms weaken and distort the optical signal launched into the fibre?

- o (a) Dispersion, radiation, and absorption.
- o (b) Scattering, radiation, and absorption.
- • (c) Scattering, absorption, and dispersion.

If choice c is selected set score to 1.

52. What medium do fibre optics use to send information?

- o (a) protons.
- • (b) photons.
- o (c) electrons.

If choice b is selected set score to 1.

53. What is the main task of a fibre optic coupler?

A fibre optic coupler....

- o (a) makes a coupling between the electrical- and the optical side of a fibre optic system.
- • (b) distributes the optical signal from one fibre among two or more fibres.
- o (c) makes a coupling between two optical fibres.

If choice b is selected set score to 1.

54. Most fibre optic connectors are designed so

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

• (b) the connectors cannot be over tightened.

o (c) the connector cannot be replaced on the aircraft.

If choice b is selected set score to 1.

55. What type of display is a 7-segment LCD display?

• (a) A passive display, using reflected light.

o (b) A passive display, generating its own light source.
o (c) An active display, generating its own light source.

If choice a is selected set score to 1.

56. What type of display is shown here?

• (a) LCD Display

o (b) CRT Display
o (c) LED Display

If choice a is selected set score to 1.

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

o (a) Demultiplexing.
o (b) Connection striping.

• (c) Multiplexing.

If choice c is selected set score to 1.

58. How are ESD sensitive devices marked?

- o (a) By a black label with yellow text that warns to use precautions when handling.
- o (b) By a yellow label with red 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 un-charge yourself by touching a metal part of the casing you are working on.
- o (b) To use a special workbench with non-static covering.
- • (c) To use a grounded wrist-wrap protection.

If choice c is selected set score to 1.

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

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

If choice b is selected set score to 1.

61. What is a danger of ESD induced damage?

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

If choice a is selected set score to 1.

62. Avionics software is in accordance to flight safety classified into 5 levels (A till E). What is the meaning of level "C"?

- • (a) A failure would cause a major failure condition.
- o (b) A failure would not have an effect on the aircraft or the pilot work load.
- o (c) A failure would cause a catastrophic aircraft failure.

If choice a is selected set score to 1.

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

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

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

If choice c is selected set score to 1.

64. Which department shall assign an airborne software critically category?

o (a) The computer designer.

- (b) The aircraft constructor.

o (c) The software developer.

If choice b is selected set score to 1.

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

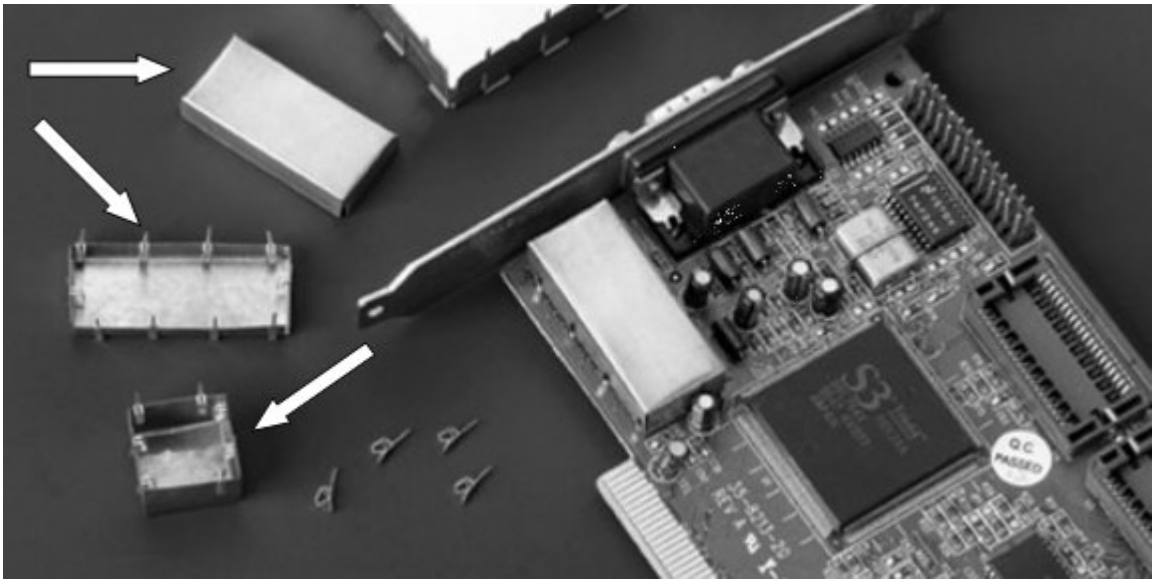
o (a) Only capacitive pickup.

- (b) Both inductive and capacitive pickup.

o (c) Only inductive pickup

If choice b is selected set score to 1.

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



o (a) Bonding cages
o (b) EMD boxes

- (c) Shielding

If choice c is selected set score to 1.

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

- o (a) By the use of static dischargers on preferred exit points, like the wingtips.
- • (b) By using bonding strips to conduct the high currents, preventing serious damage.
- o (c) By use of special surge protection devices, that short-circuit the generated current.

If choice b is selected set score to 1.

68. In which direction is ACARS information transmitted?

- o (a) From air to ground only, because it transmits aircraft data.
- • (b) Both directions are used, because it is a communication system..
- o (c) From ground to air only, because it is an information service.

If choice b 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....

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

If choice b 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. What is the basic concept behind Integrated Modular Avionics?

To have a modular system....

- • (a) sharing hardware for multiple functions.

- o (b) that can easily be maintained.
- o (c) with processing units for every function.

If choice a is selected set score to 1.

72. What is a BITE ?

- (a) Build In Test Equipment

- o (b) 8 Bits
- o (c) Boeing Interface Test Equipment

If choice a is selected set score to 1.

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