Question block created by wizard

This exam contains 72 questions.

1. EICAS provides the....

a. engine parameters and system warnings only.
b. engine parameters only.
c. engine parameters and engine warnings only.

2. Engine parameters are displayed on....

a. FMS CDU
b. EHSI
c. ECAM

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

a. EHSI
b. PFD
c. ECAM

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

a. EHSI.
b. EADI.
c. FMC CDU.

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

a. $226_{(10)}$
b. $30_{(10)}$
c. $22_{(10)}$

6. Convert 2C hex to octal.

a. 44
b. 35
c. 54

7. Convert the binary word 1110 to decimal.

a. 12
b. 14
c. 15

8. Convert decimal 15 into binary.

a. 1111
b. 1110
c. 1101

9. Convert hexadecimal 1D to binary.

a. 29
b. 11101
c. 101001

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

a. 70
b. 61
c. 58

11. What can you say about Analogue Computers?

a. They are, even today, more accurate than digital computers.
b. They are still used in modern aircraft.
c. They are all replaced by digital computers with ADC and DAC convertors.

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.

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

a. position feedback to rate feedback.
b. analogue to digital.
c. digital to analogue.

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.
b. positive.
c. either positive or negative.

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

a. sampling rate.
b. frequency.
c. amplitude.

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

a. 2 bits.
b. 8 bits.
c. 4 bits.

17. What is a parity check?

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.
c. Sending an additional bit in a data-word transmission for bit filling checking .

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

a. Simplex.
b. Duplex.
c. Half duplex.

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.
b. ethernet devices such as computers.
c. central Ethernet computer in a LAN.

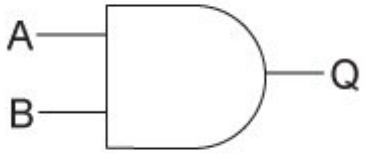
20. What is the function of a "broadcast" in an Ethernet LAN?

This is a message intended for....

a. a group of nodes in the network.

b. all nodes in the network.
c. only one node in the network.

21. What type of logic gate is shown here?

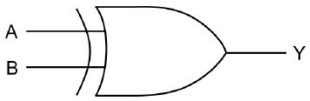


a. AND gate.
b. EXNOR gate.
c. OR gate.

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

a. A+B+C
b. A-B-C
c. A·B·C

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

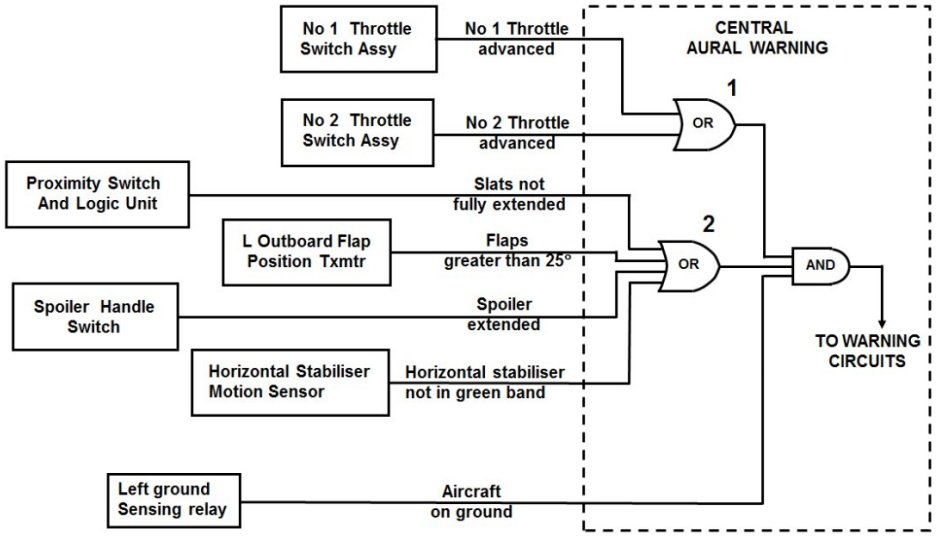
b.

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

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



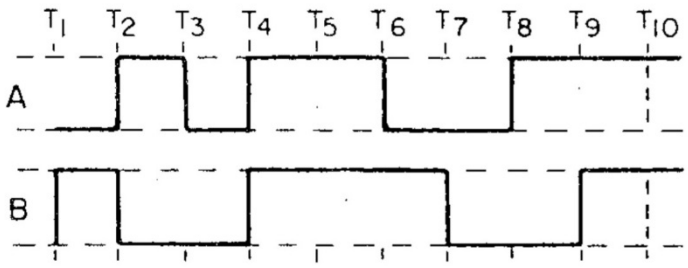
a. The spoilers are extended in flight.
b. If the flap position is greater than 25° in flight.
c. Only on the ground.

25. What is a tristate device?

This is....

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

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



a. T2, T6 and T10
b. T2, T5 and T8
c. T4, T5 and T9

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

a. ensure the input signal is DC only.
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.

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. NOT
b. OR
c. AND

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

a. NAND
b. OR
c. NOR

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

a. A = B
b. f = A•B
c. f = A+B

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

a. ALU
b. CPU
c. input-output device.

32. What is the purpose of the ALU?

a. To convert serial into parallel data.
b. The part of the CPU unit where arithmetic & logic operations are carried out.
c. To store data being used by the CPU.

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

a. register section, ALU and timing and control section.
b. memory, input/output ports and CPU.
c. RAM/ROM and input/output ports.

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

a. a clock signal.
b. parallel data.
c. serial data.

35. A byte is....

a. a 8 bit word.
b. a 16 bit word.
c. a 4 bit word.

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

a. SRAM.
b. DRAM.
c. EPROM.

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

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

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

a. Memory
b. CPU
c. ALU

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

a. registers.
b. semiconductor memory.
c. hard disk.

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

a. secondary memory.
b. Internal memory.
c. microprocessor.

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

a. Memory Data Register.
b. Memory Address Register.
c. Instruction Register.

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

a. Yes, that is possible and it depends on the digital input value.
b. No, this is not possible with a decoder.
c. Yes, this situation is temporary possible at the moment that the input value changes.

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

a. decoder
b. encoder
c. comparator

44. An encoder changes....

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

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

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

a. Duplexing.
b. Multiplexing.
c. Mixing.

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.

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

a. 3
b. 4
c. 2

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

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

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

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

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

a. Dispersion, radiation, and absorption.
b. Scattering, radiation, and absorption.
c. Scattering, absorption, and dispersion.

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

a. protons.
b. photons.
c. electrons.

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

A fibre optic coupler....

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.
c. makes a coupling between two optical fibres.

54. Most fibre optic connectors are designed so

a. the receptacle has to torque to a designated torque to ensure correct alignment.
b. the connectors cannot be over tightened.
c. the connector cannot be replaced on the aircraft.

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

a. A passive display, using reflected light.
b. A passive display, generating its own light source.
c. An active display, generating its own light source.

56. What type of display is shown here?

a. LCD Display
b. CRT Display
c. LED Display

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

a. Demultiplexing.
b. Connection striping.
c. Multiplexing.

58. How are ESD sensitive devices marked?

a. By a black label with yellow text that warns to use precautions when handling.
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.

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

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

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

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

61. What is a danger of ESD induced damage?

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

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.
b. A failure would not have an effect on the aircraft or the pilot work load.
c. A failure would cause a catastrophic aircraft failure.

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

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

c. Document DO-178/ED-121

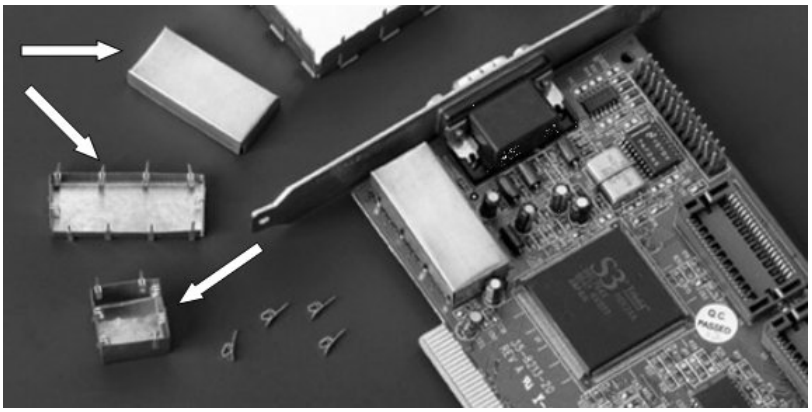
64. Which department shall assign an airborne software critically category?

a. The computer designer.
b. The aircraft constructor.
c. The software developer.

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

a. Only capacitive pickup.
b. Both inductive and capacitive pickup.
c. Only inductive pickup

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



a. Bonding cages
b. EMD boxes
c. Shielding

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

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.
c. By use of special surge protection devices, that short-circuit the generated current.

68. In which direction is ACARS information transmitted?

a. From air to ground only, because it transmits aircraft data.
b. Both directions are used, because it is a communication system..

c. From ground to air only, because it is an information service.

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

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

The transponder sends also....

a. vertical speed information.
b. altitude information.
c. airspeed information.

71. What is the basic concept behind Integrated Modular Avionics?

To have a modular system....

a. sharing hardware for multiple functions.
b. that can easily be maintained.
c. with processing units for every function.

72. What is a BITE ?

a. Build In Test Equipment
b. 8 Bits
c. Boeing Interface Test Equipment