Question block created by wizard

This exam contains 72 questions.

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

a. synoptic display.
b. flight phase page.
c. secondary engine parameters.

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

a. ECAM
b. EADI
c. FMS

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

a. PFD
b. EHSI
c. ECAM

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

a. large viewing angle.
b. brighter clearer output.
c. more energy efficient.

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

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

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

a. 35
b. 25
c. 33

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

a. $2_{(10)}$
b. $5_{(2)}$
c. $5_{(10)}$

8. Convert decimal 15 into binary.

a. 1111
b. 1110
c. 1101

9. Convert the hexadecimal number D into decimal.

a. 14
b. 13
c. 15

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

a. $110111_{(2)}$
b. $110101_{(2)}$
c. $10001101_{(2)}$

11. What can you say about Analogue Computers?

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.

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

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.

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

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

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

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

17. What is a parity check?

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

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

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

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

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

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

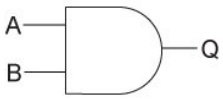
20. What is the function of a "broadcast" in an Ethernet LAN?

This is a message intended for....

a. only one node in the network.

b. a group of nodes in the network.
c. all nodes in the network.

21. What type of logic gate is shown here?

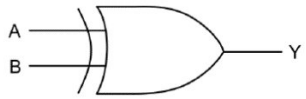


a. OR gate.
b. AND gate.
c. EXNOR gate.

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

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

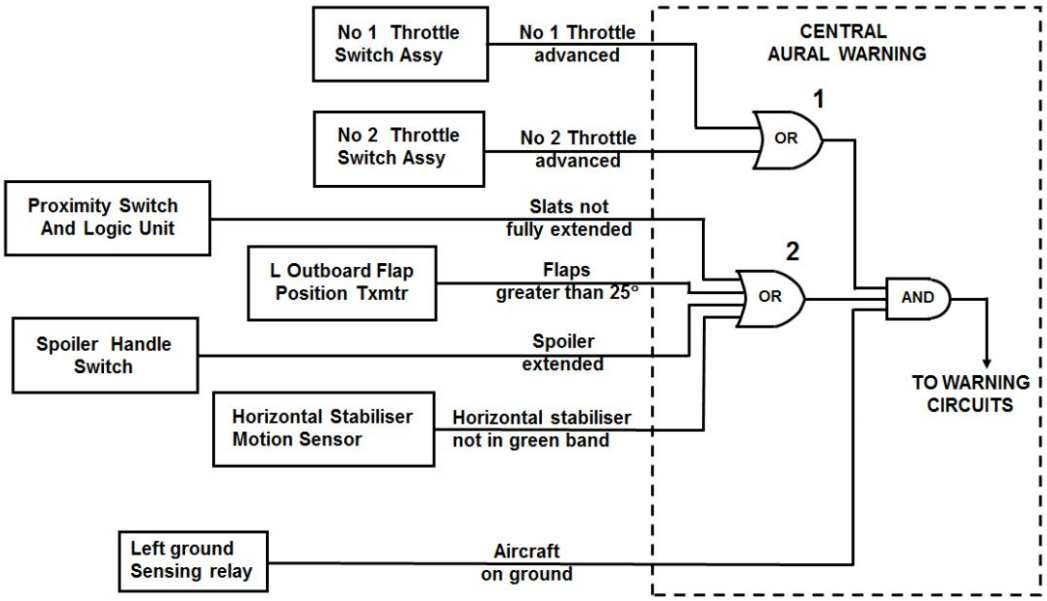
b.

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?

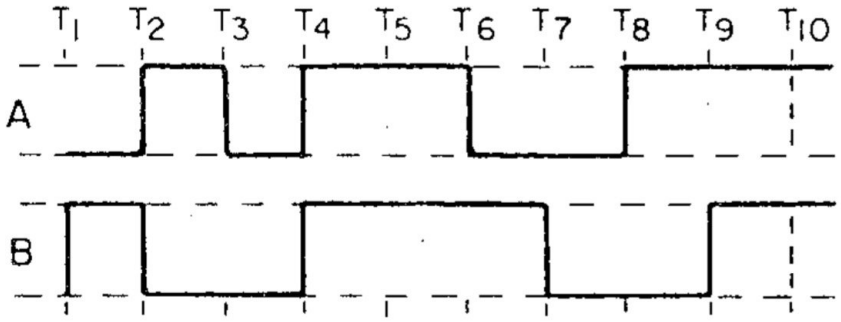


a. The spoilers are extended in flight.
b. Only on the ground.
c. If the flap position is greater than 25° in flight.

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

a. up and the outputs down.
b. left and the outputs right.
c. right and the outputs left

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. invert the input signal such that the output is always of the opposite state.
b. ensure the input signal is DC only.
c. ensure the output signal is of the same state as the input signal.

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
b. OR
c. NOT

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

a. a NOR gate
b. an OR gate
c. a NAND gate

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

a. f = A•B
b. A = B
c. f = A+B

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

a. 4
b. 8
c. 16

32. What is the purpose of the ALU?

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

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

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

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

a. an OP Code, an operand code and an address.
b. an Op Code and an operand address.
c. an operand code and an address.

35. A byte is....

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

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

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

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

a. volatile.
b. has small capacity.
c. programmable.

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

a. ALU
b. Memory
c. CPU

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

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

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

a. activates the output devices.
b. monitors the flow of information.
c. communicates its results.

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

a. Yes, that is allowed but only the entry with the highest priority determines what the output will be.
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.

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

a. Repeater.
b. Multiplexer.
c. Decoder.

44. An encoder changes....

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

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

a. up to 10,000
b. over 100,000
c. Approximately 1000

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

a. multiplexing.
b. modulation.
c. encoding.

47. A multiplexer....

a. takes one signal in and converts it to a parallel transmission output.
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.

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

a. 2
b. 8
c. 3

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

a. Small bend radius.
b. No insulation or coating required.
c. Large bandwidth.

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

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

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

a. A meridional ray.
b. An unbalanced ray.
c. A ray that propagates without passing through the centre axis of the fibre.

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

a. a bandwidth in the visible light area.
b. lower bandwidth than visible light.
c. higher bandwidth than visible light.

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

54. Most fibre optic connectors are designed so

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.

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.

56. What type of display is shown here?

a. A CRT display.
b. A video display.
c. An alpha-numeric display.

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

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

58. How are ESD sensitive devices marked?

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

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

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

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

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

61. What is a danger of ESD induced damage?

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

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

a. Level A
b. Level C
c. Level B

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

a. The Aircraft Maintenance Manual (AMM)
b. The aircraft Minimum Equipment List (MEL)
c. Document DO-178/ED-121

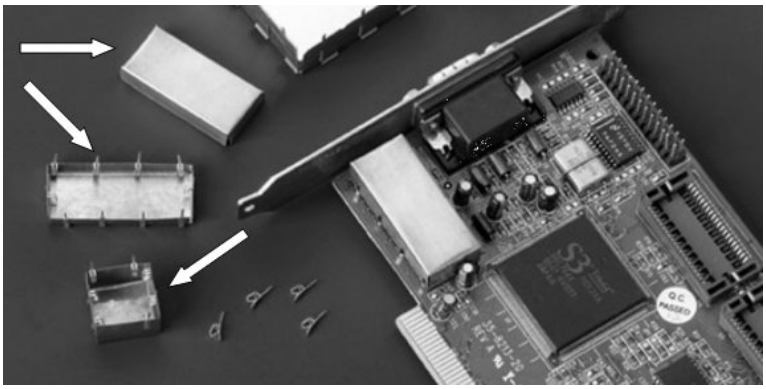
64. May the User Modifiable Software (UMS) be modified by the aircraft operator?

a. Never during the flight.
b. Yes, only with review by the Civil Aviation Authority (CAA).
c. Yes, without review by the Civil Aviation Authority (CAA).

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

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

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



a. Shielding
b. EMD boxes
c. Bonding cages

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

68. In which direction is ACARS information transmitted?

a. Both directions are used, because it is a communication system..
b. From air to ground only, because it transmits aircraft data.
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 send a steering command to the autopilot.
b. inform the pilot to take action to correct the deviation.
c. take action and correct the aircraft heading by steering the aircraft.

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

The transponder sends also....

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

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

a. using less aircraft systems.
b. using less Line Replaceable Units (LRU's)
c. using lighter materials for avionics.

72. What is a BITE ?

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