

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. secondary engine parameters.
 - c. flight phase page.

2. Which display in a glass cockpit shows the data of aircraft systems and engines?
 - a. EADI
 - b. ECAM
 - c. FMS

3. What would you expect to see displayed on an EADI display?
 - a. Compass heading, selected heading and VOR.
 - b. Course information, weather radar, way point alert and bearing pointers.
 - c. Flight director command bars, slip indicator, rate to altitude & auto-land.

4. A CRT display has the advantage over an LCD display by....
 - a. more energy efficient.
 - b. large viewing angle.
 - c. brighter clearer output.

5. What is the value of $342_{(8)}$ in the hexadecimal system?
 - a. $E2_{(16)}$
 - b. $CE_{(16)}$
 - c. $FE_{(16)}$

6. Convert $011101_{(2)}$ to Octal.
 - a. 33
 - b. 35
 - c. 25

- 7.** $101_{(2)}$ converted to decimal is?
- a. $5_{(10)}$
 - b. $2_{(10)}$
 - c. $5_{(2)}$
- 8.** Convert decimal 345 in binary.
- a. 110011001
 - b. 100111001
 - c. 101011001
- 9.** Convert the hexadecimal number D into decimal.
- a. 13
 - b. 14
 - c. 15
- 10.** Calculate: $1100001_{(2)} - 101100_{(2)} = \dots\dots\dots_{(2)}$
- a. $110111_{(2)}$
 - b. $10001101_{(2)}$
 - c. $110101_{(2)}$
- 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. a commutator.
 - b. an analogue to digital converter.
 - c. a digital to analogue converter.
- 13.** An encoder changes....
- a. analogue to digital.
 - b. data from one format to another.
 - c. digital to analogue.

- 14.** A digital to analogue converter that requires the output range between 0 V and -10 V would have....
- a non-inverting amplifier in line with the output with a resistor to ground.
 - a non-inverting amplifier in parallel with the output line.
 - an inverting amplifier in series with the output line.
- 15.** A DAC uses a precision amplifier to....
- compensates for the variation of the feedback resistor due to temperature.
 - ensure the output voltages remain accurate.
 - ensure the input remains accurate.
- 16.** What is the transmission rate frequency of an ARINC429 data-bus?
- 560 kHz
 - 100 kHz
 - 75 kHz
- 17.** What is the purpose of the ARINC429 8 bit label?
- To indicate the distance from transmitter to receiver.
 - To define the type of data in the rest of the data-word.
 - To indicate the numbers of receivers on the data-bus.
- 18.** Give the name of a data bus which can transmit data in one direction only.
- Half duplex bus
 - Simplex bus
 - Duplex bus
- 19.** To what does an ethernet network protocol refer?
- The maximum number of computers in the same network.
 - The maximum distance between computers in the same network.
 - Rules that control and regulate the communication.

20. What is the purpose of the destination address in the ethernet medium?

To reach....

- a. all nodes connected to the ethernet.
- b. two nodes connected to the ethernet at the same time.
- c. a specific node connected to the ethernet.

21. Which gate belongs to the truth table shown here?

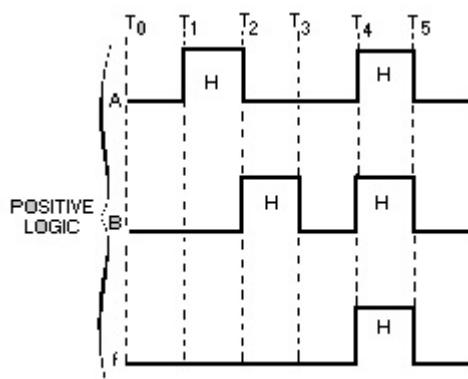
A	B	Output
0	0	1
0	1	0
1	0	0
1	1	1

- a. NAND
- b. EXNOR
- c. NOR

22. What is meant by "positive logic"?

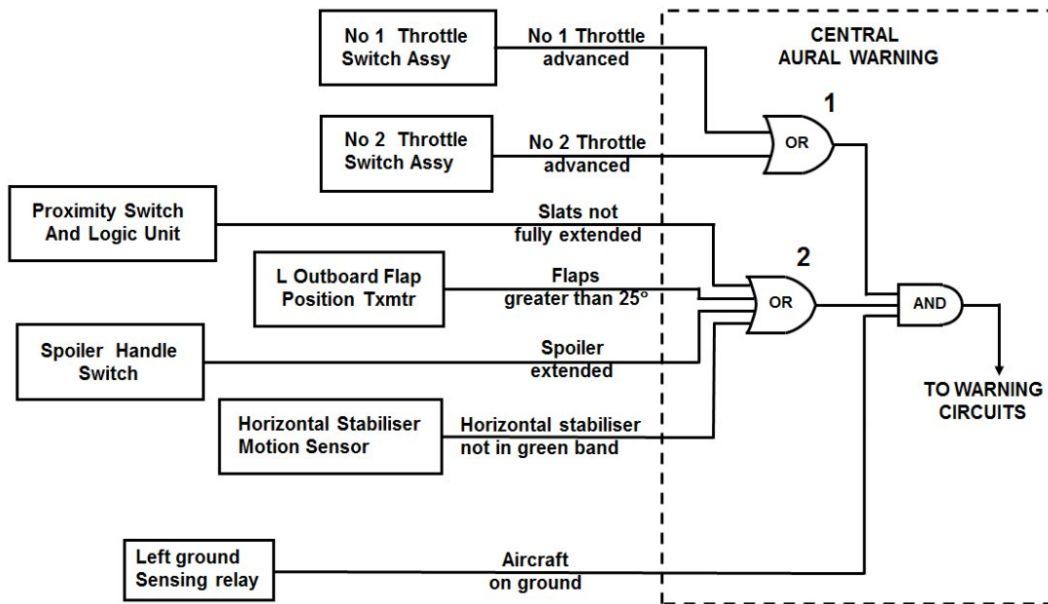
- a. The "1" state and the "0" state are equal.
- b. The "1" state = -5 V, the "0" state = +5 V
- c. The "1" state = +5 V, the "0" state = -5 V

23. What gate is represented by the time-diagram shown here?



- a. AND gate.
- b. OR gate.
- c. NAND gate.

24. In witch situation is it not possible to generate a take-off warning?

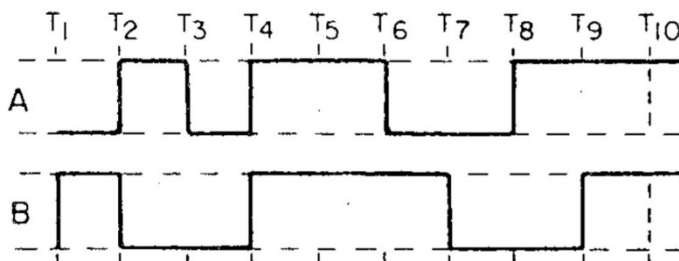


- When the engine throttles are in advanced position.
- If the flap position is greater than 25°.
- Only during flight.

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

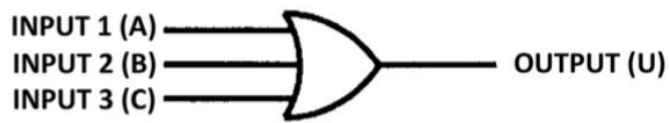
- left and the outputs right.
- right and the outputs left
- up and the outputs down.

26. At which of the following times will the output of the AND gate be LOW? See the figure below.



- T1 to T4 and T5 to T8
- T1 to T3 and T6 to T10
- T1 to T4 and T6 to T9

27. Which of the following gates is represented by the symbol in the figure?



- a. NOR
- b. AND
- c. OR

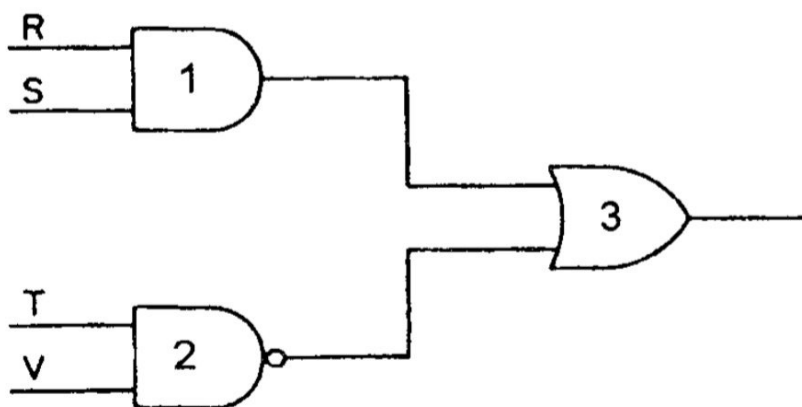
28. The output of an AND gate, with two inputs A and B, is logic 1. The two inputs will have the logic states of...

- a. $A = 1, B = 1$
- b. $A = 0, B = 0$
- c. $A = 1, B = 0$

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 expressions represents the output of gate 3?



- a. $(R \cdot S) \cdot (T \cdot V)$
- b. $(R \cdot S) + (T \cdot V)$
- c. $(R \cdot S) + \overline{(T \cdot V)}$

- 31.** Speed of computer process information depends upon....
- the time period to access the memory.
 - the external inputs to the system.
 - the size of the programme.
- 32.** A typical example of an IC is....
- dip switch
 - CPU
 - ALU
- 33.** A computer consist of at least the CPU and ...
- register section, ALU, timing and control section.
 - memory, ALU, input & output ports.
 - memory and input & output ports.
- 34.** A single address instruction word consists of....
- an Op Code and an operand address.
 - an operand code and an address.
 - an OP Code, an operand code and an address.
- 35.** A typical example of a mass storage memory device which "write once" and "read many" is...
- a CD Rom.
 - a magnetic tape.
 - an IC.
- 36.** Which of the following chips can be reprogrammed with special electric pulses?
- EEPROM
 - EPROM
 - PROM
- 37.** RAM is used as a short term memory because it is....
- programmable.
 - has small capacity.
 - volatile.

38. The first microprocessors produced by Intel Corporation and Texas Instruments were used primarily to control....

- a. calculators.
- b. washing machines.
- c. personal computers.

39. The storage locations in the internal storage of a CPU are called....

- a. contents.
- b. locations.
- c. addresses.

40. How do you call the section of the CPU that selects, interprets and send to the execution of program instructions?

- a. Register unit.
- b. ALU
- c. Control unit.

41. Which of the following devices are used to quickly accept, store, and transfer data and instructions that are being used immediately by the CPU?

- a. registers.
- b. data buses.
- c. microprocessors.

42. How do we call the component that converts 8 digital inputs to a 3-bit digital output?

- a. Encoder.
- b. Emulator.
- c. Decoder.

43. What is the device used to convert Binary Coded Decimal into separate supplies for a seven segment digital display?

- a. multiplexer.
- b. decoder.
- c. demultiplexer.

44. A priority encoder....

- a. outputs the highest input.
- b. outputs the lowest input.

c. outputs the selected input.

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

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

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

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

47. The purpose of a demultiplexer is:

- a. Selection of one signal from a serial signal input.
- b. Conversion from digital data to analogue data.
- c. Connecting different users to one output.

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

- a. 3
- b. 8
- c. 2

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....

- a. can only transmit 1 message at a time.
- b. can transmit several messages simultaneously.
- c. is only used for non-essential messages.

51. Fibre optic cables use....

- a. reflective inner shell.
- b. refractive outer shell.

- c. reflective outer shell.

52. Fibre optic data is sent by....

- a. modulating the frequency of a filament beam.
- b. modulating the frequency of a laser beam.
- c. a strobe 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 connectors cannot be over tightened.
- b. the connector cannot be replaced on the aircraft.
- 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 12-segment display.
- b. This is a matrix display.
- c. This is a starburst display.

56. What type of display is shown here?



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

57. How are different colours created in a CRT?

By using a combination of....

- a. Green, Blue and Yellow.
- b. Red, Yellow and Green.
- c. Red, Green and Blue.

58. What is the minimum resistance of a slow-discharge resistor of an ESD wrist strap?

- a. 1 M Ω
- b. 100 Ω
- c. 1 Ω

59. What is the description for: "a static electrical charge"?

- a. The current in an external power cable.
- b. An electrical charge in rest.
- c. The output voltage of an aircraft battery.

60. What is the first action to do before removing a printed circuit board (PCB)?

- a. Checking the AMM.
- b. Look for a non-conductive clean work-table.
- c. Placing a grounded wrist strap.

61. Which static charge voltage can be reached by walking across a carpet at a low humidity?

- a. 100 V
- b. 300 V
- c. 35000 V

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

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

63. What is the content of the Aircraft Configuration list (ACL)?

It is a list of....

- a. software in database-form for using with the flight management computer.
- b. software which can be loaded.
- c. line replaceable units with loadable software.

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

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

65. What means: Electro Magnetic Compatible (EMC)?

- a. Immune to a specified electromagnetic environment.
- b. Creating a magnetic field around a conductor.
- c. Transmission of electrical energy into free space.

66. In what range are frequencies considered to be part of the High Intensity Radiated Fields (HIRF)?

- a. 50 kHz to 100 kHz.
- b. 1 GHz to 3 GHz.
- c. 10kHz tot 18 GHz.

- 67.** What can you do to prevent the radome and radar for a lightning strike?
- Use metallic paint on the radome.
 - Use of static dischargers.
 - Use of lightning diverters.
- 68.** At what frequency does the Aircraft Communication Addressing and Reporting System (ACARS) operate?
- 121.50 Mhz
 - 131.55 MHz
 - 225 MHz.
- 69.** How long is the update interval for the navigational data base of the Flight Management System (FMS)?
- Weekly.
 - Every day.
 - Four weekly.
- 70.** How many aircraft can the Airborne Collision Avoidance System II (ACAS II) track?
- Up to 3.
 - Up to 30.
 - Up to 45.
- 71.** One of the benefits of Integrated Modular Avionics (IMA) is lower weight. This is accomplished by.....
- using less aircraft systems.
 - using less Line Replaceable Units (LRU's)
 - using lighter materials for avionics.
- 72.** When is information updating in the Electronic Library System (ELS) accomplished?
- By a gate link (WIFI connection) on the ground.
 - Only during flight.
 - Only during a line maintenance inspection.