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.

• (b) secondary engine parameters.

o (c) flight phase page.

If choice b is selected set score to 1.

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

o (a) EADI

• (b) ECAM

o (c) FMS

If choice b is selected set score to 1.

3. What would you expect to see displayed on an EADI display?

o (a) Compass heading, selected heading and VOR.
o (b) Course information, weather radar, way point alert and bearing pointers.

• (c) Flight director command bars, slip indicator, rate to altitude & auto-land.

If choice c is selected set score to 1.

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

o (a) more energy efficient.

• (b) large viewing angle.

o (c) brighter clearer output.

If choice b is selected set score to 1.

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

• (a) $E2_{(16)}$

o (b) $CE_{(16)}$
o (c) $FE_{(16)}$

If choice a is selected set score to 1.

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

- (a) 33
- (b) 35
- (c) 25

If choice b is selected set score to 1.

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

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

If choice a is selected set score to 1.

8. Convert decimal 345 in binary.

- (a) 110011001
- (b) 100111001
- (c) 101011001

If choice c is selected set score to 1.

9. Convert the hexadecimal number D into decimal.

- (a) 13
- (b) 14
- (c) 15

If choice a is selected set score to 1.

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

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

If choice c is selected set score to 1.

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.

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....

o (a) a commutator.

- (b) an analogue to digital converter.

o (c) a digital to analogue converter.

If choice b is selected set score to 1.

13. An encoder changes....

o (a) analogue to digital.

- (b) data from one format to another.

o (c) digital to analogue.

If choice b is selected set score to 1.

14. A digital to analogue converter that requires the output range between 0 V and -10 V would have....

o (a) a non-inverting amplifier in line with the output with a resistor to ground.
o (b) a non-inverting amplifier in parallel with the output line.

- (c) an inverting amplifier in series with the output line.

If choice c is selected set score to 1.

15. A DAC uses a precision amplifier to....

o (a) compensates for the variation of the feedback resistor due to temperature.

- (b) ensure the output voltages remain accurate.

o (c) ensure the input remains accurate.

If choice b is selected set score to 1.

16. What is the transmission rate frequency of an ARINC429 data-bus?

o (a) 560 kHz

- (b) 100 kHz

- (c) 75 kHz

If choice b is selected set score to 1.

17. What is the purpose of the ARINC429 8 bit label?

- (a) To indicate the distance from transmitter to receiver.
- (b) To define the type of data in the rest of the data-word.
- (c) To indicate the numbers of receivers on the data-bus.

If choice b is selected set score to 1.

18. Give the name of a data bus which can transmit data in one direction only.

- (a) Half duplex bus
- (b) Simplex bus
- (c) Duplex bus

If choice b is selected set score to 1.

19. To what does an ethernet network protocol refer?

- (a) The maximum number of computers in the same network.
- (b) The maximum distance between computers in the same network.
- (c) Rules that control and regulate the communication.

If choice c is selected set score to 1.

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.

If choice c is selected set score to 1.

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

- o (a) NAND
- • (b) EXNOR
- o (c) NOR

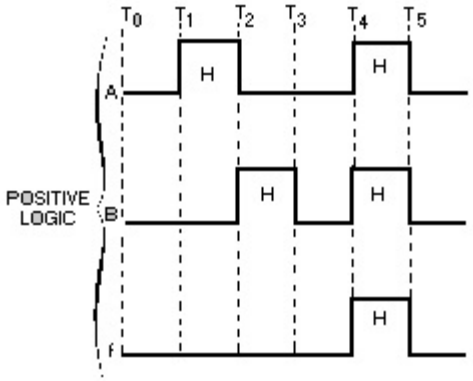
If choice b is selected set score to 1.

22. What is meant by "positive logic"?

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

If choice c is selected set score to 1.

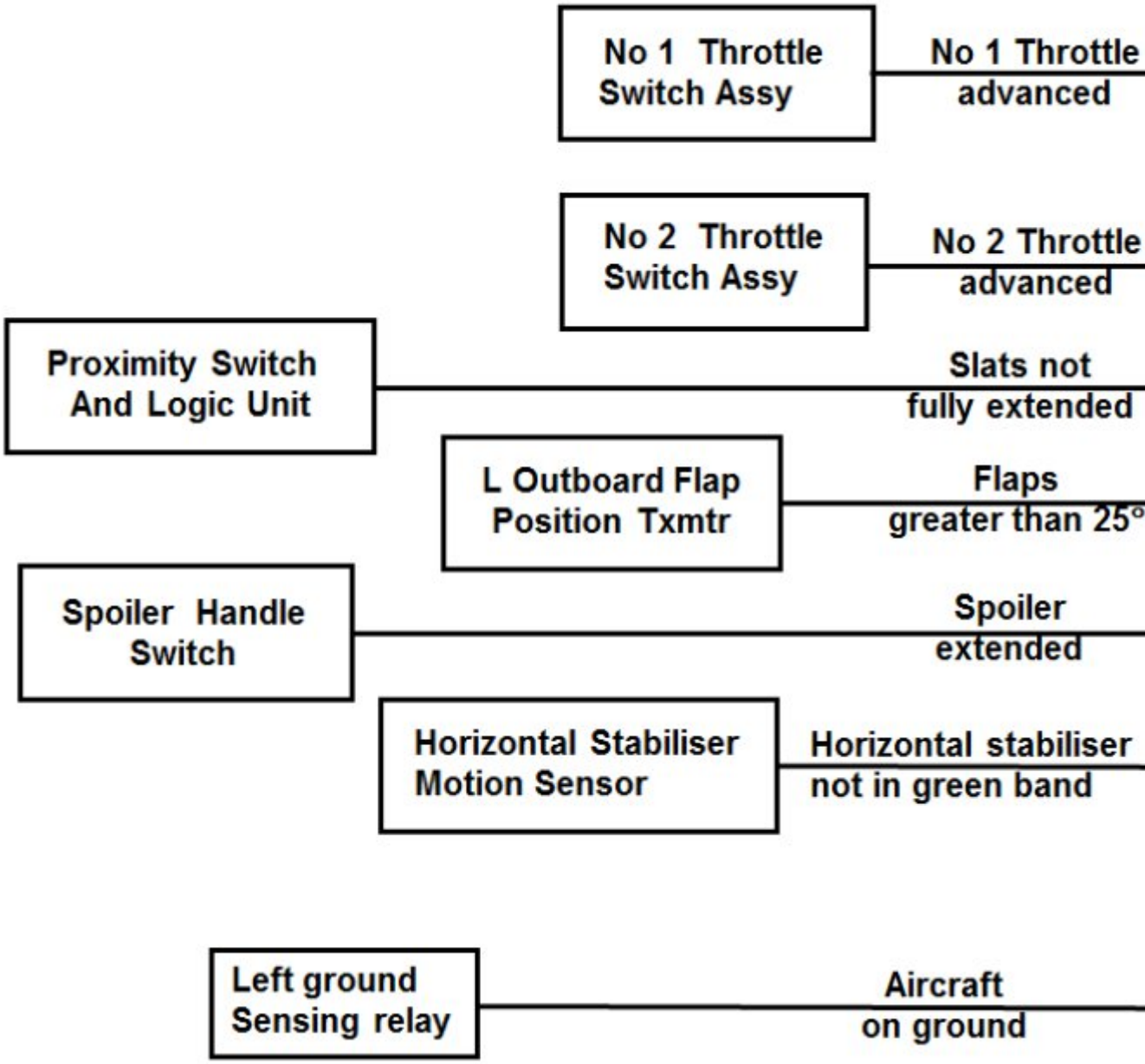
23. What gate is represented by the time-diagram shown here?



- • (a) AND gate.
- o (b) OR gate.
- o (c) NAND gate.

If choice a is selected set score to 1.

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



- (a) When the engine throttles are in advanced position.
- (b) If the flap position is greater than 25°.

- (c) Only during flight.

If choice c is selected set score to 1.

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

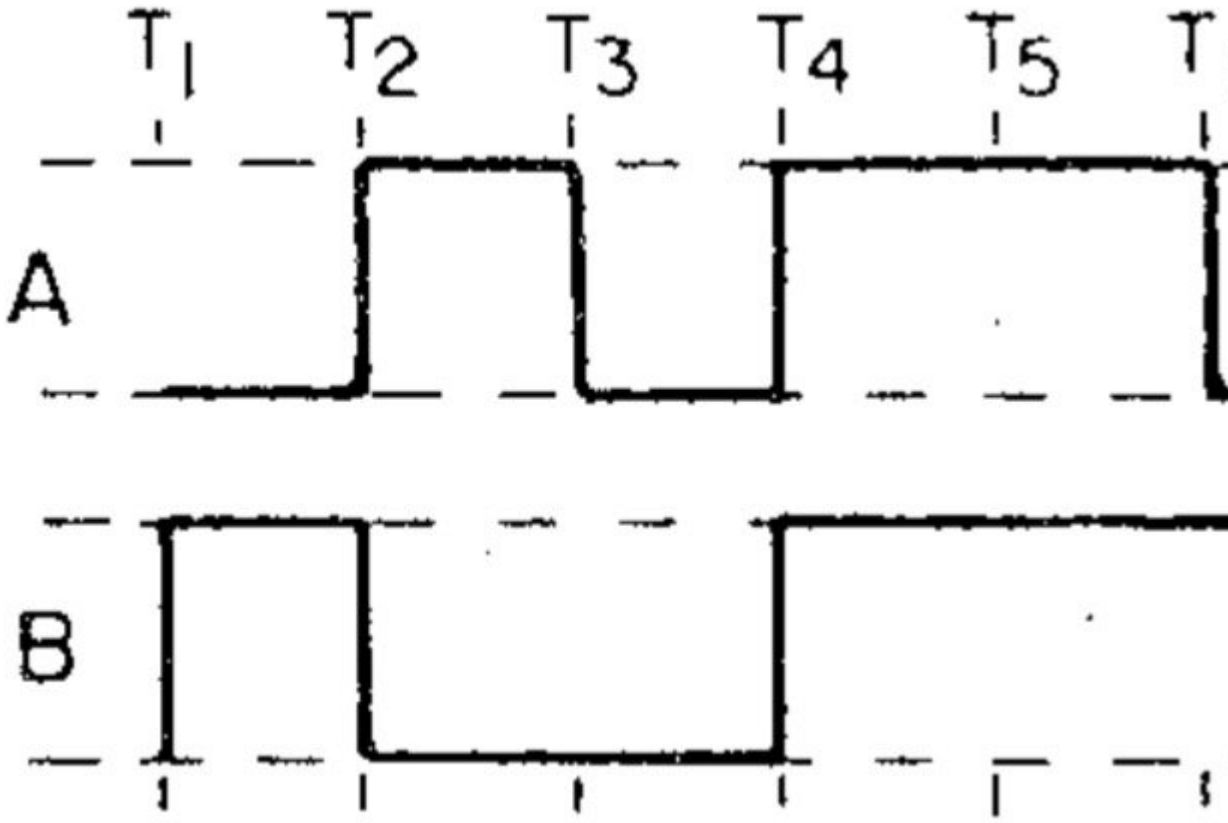
- (a) left and the outputs right.

- (b) right and the outputs left

o (c) up and the outputs down.

If choice a is selected set score to 1.

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

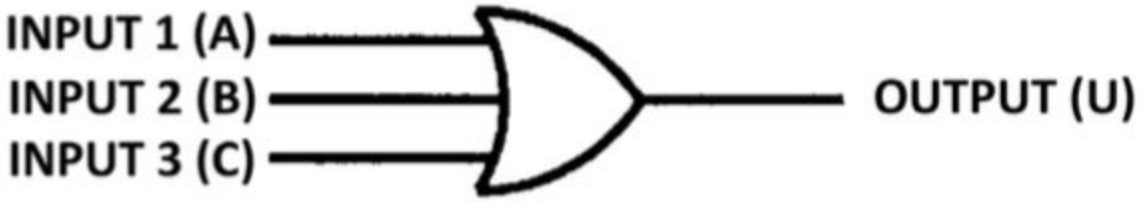


o (a) T1 to T4 and T5 to T8
o (b) T1 to T3 and T6 to T10

- (c) T1 to T4 and T6 to T9

If choice c is selected set score to 1.

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



- (a) NOR
- (b) AND

- (c) OR

If choice c is selected set score to 1.

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

If choice a is selected set score to 1.

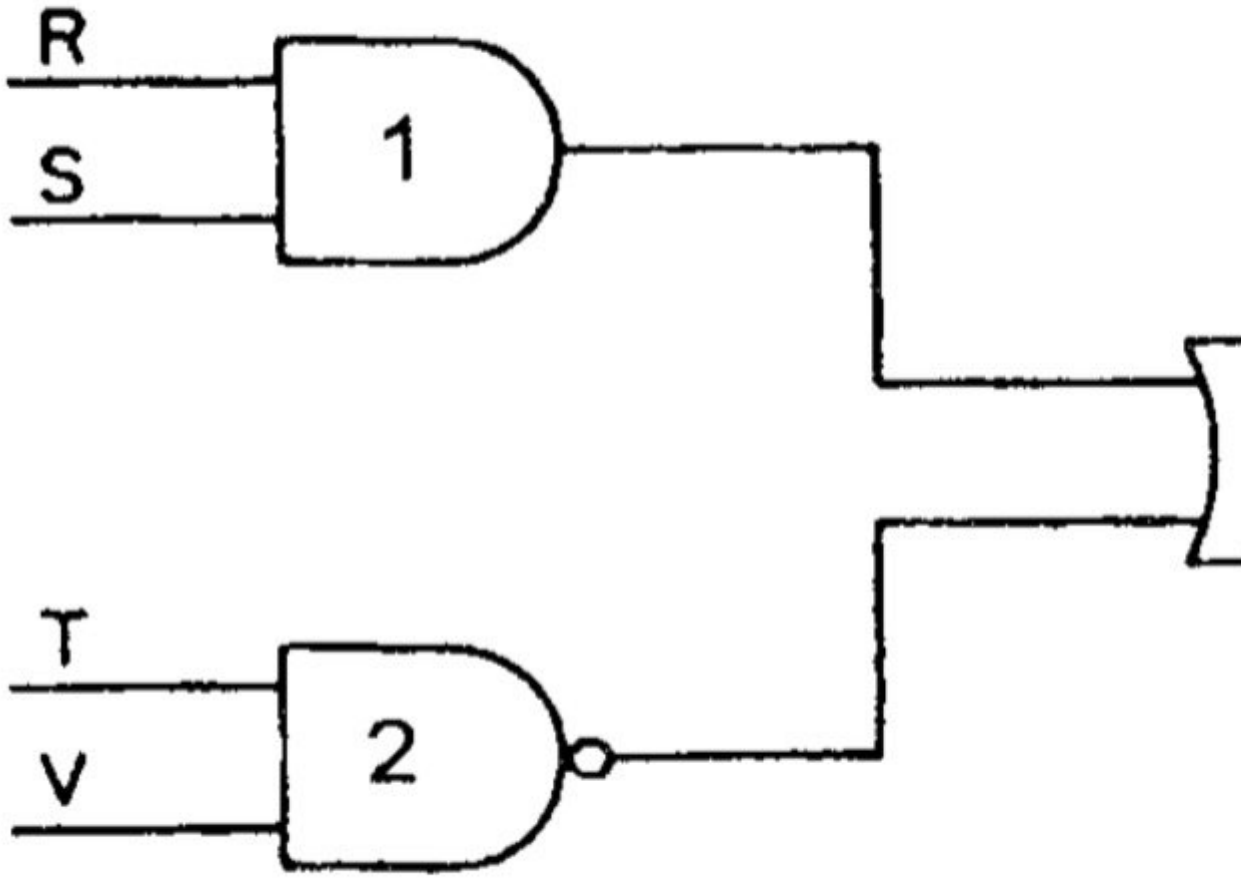
29. Adding invertors to the two inputs of an AND gate makes....

- (a) a NOR gate

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

If choice a is selected set score to 1.

30. Which of the following output expressions represents the output of gate 3?



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

If choice c is selected set score to 1.

31. Speed of computer process information depends upon....

- • (a) the time period to access the memory.
- o (b) the external inputs to the system.
- o (c) the size of the programme.

If choice a is selected set score to 1.

32. A typical example of an IC is....

- o (a) dip switch
- (b) CPU
- o (c) ALU

If choice b is selected set score to 1.

33. A computer consist of at least the CPU and …

- o (a) register section, ALU, timing and control section.
- o (b) memory, ALU, input & output ports.
- (c) memory and input & output ports.

If choice c is selected set score to 1.

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

- (a) an Op Code and an operand address.
- o (b) an operand code and an address.
- o (c) an OP Code, an operand code and an address.

If choice a is selected set score to 1.

35. A typical example of a mass storage memory device which "write once" and "read many" is…

- (a) a CD Rom.
- o (b) a magnetic tape.
- o (c) an IC.

If choice a is selected set score to 1.

36. Which of the following chips can be reprogrammed with special electric pulses?

- (a) EEPROM
- o (b) EPROM
- o (c) PROM

If choice a is selected set score to 1.

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

- o (a) programmable.
- o (b) has small capacity.

- (c) volatile.

If choice c is selected set score to 1.

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

- (a) calculators.

o (b) washing machines.
o (c) personal computers.

If choice a is selected set score to 1.

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

o (a) contents.
o (b) locations.

- (c) addresses.

If choice c is selected set score to 1.

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

o (a) Register unit.
o (b) ALU

- (c) Control unit.

If choice c is selected set score to 1.

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.

o (b) data buses.
o (c) microprocessors.

If choice a is selected set score to 1.

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

- (a) Encoder.

o (b) Emulator.
o (c) Decoder.

If choice a is selected set score to 1.

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

o (a) multiplexer.

• (b) decoder.

o (c) demultiplexer.

If choice b is selected set score to 1.

44. A priority encoder....

• (a) outputs the highest input.

o (b) outputs the lowest input.
o (c) outputs the selected input.

If choice a is selected set score to 1.

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

• (a) over 100,000

o (b) Approximately 1000
o (c) up to 10,000

If choice a is selected set score to 1.

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

o (a) encoding.

• (b) multiplexing.

o (c) modulation.

If choice b is selected set score to 1.

47. The purpose of a demultiplexer is:

• (a) Selection of one signal from a serial signal input.

o (b) Conversion from digital data to analogue data.
o (c) Connecting different users to one output.

If choice a is selected set score to 1.

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

• (a) 3

- (b) 8
- (c) 2

If choice a is selected set score to 1.

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.

If choice c is selected set score to 1.

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.

If choice b is selected set score to 1.

51. Fibre optic cables use....

- (a) reflective inner shell.
- (b) refractive outer shell.
- (c) reflective outer shell.

If choice b is selected set score to 1.

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.

If choice b 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.

- (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.

If choice a is selected set score to 1.

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.

If choice a is selected set score to 1.

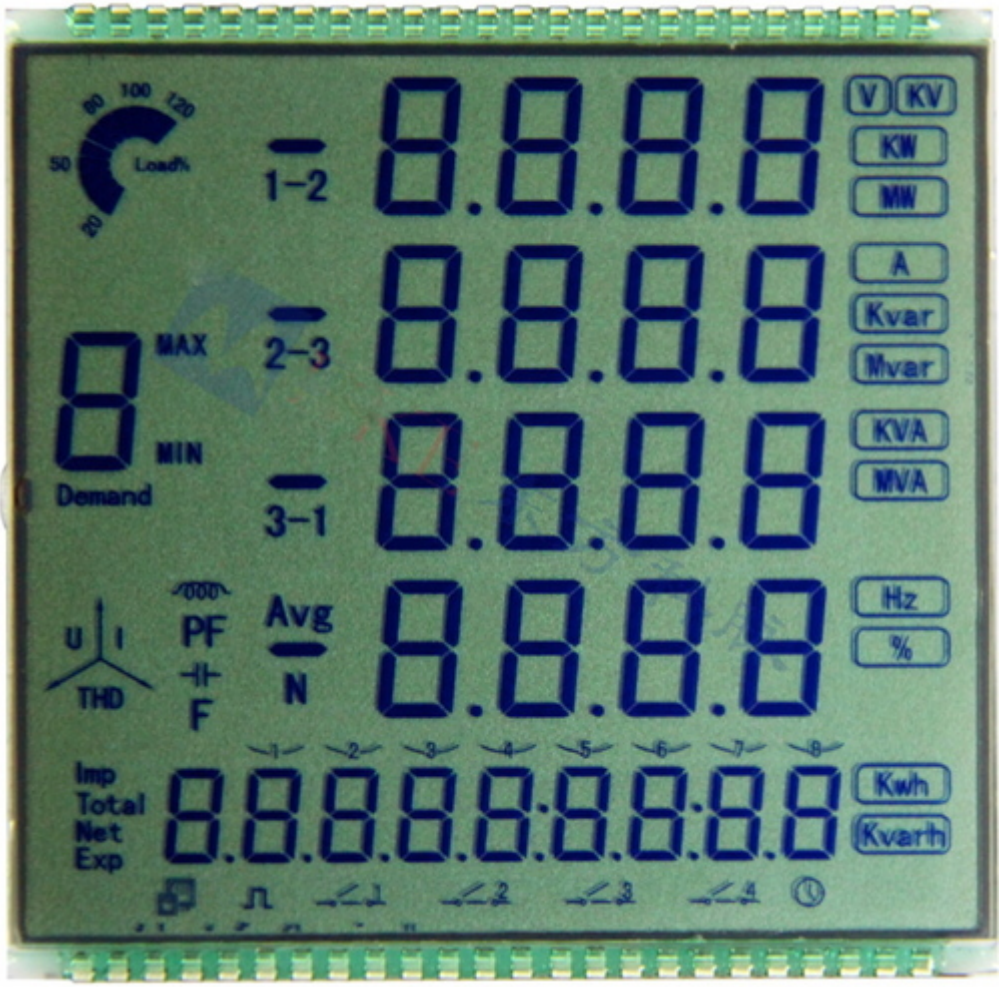
55. What type of display is shown here?

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

- (c) This is a starburst display.

If choice c is selected set score to 1.

56. What type of display is shown here?



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

- • (c) An alpha-numeric display.

If choice c is selected set score to 1.

57. How are different colours created in a CRT?

By using a combination of....

- o (a) Green, Blue and Yellow.
- o (b) Red, Yellow and Green.

- • (c) Red, Green and Blue.

If choice c is selected set score to 1.

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

- (a) 1 MΩ

o (b) 100 Ω
o (c) 1 Ω

If choice a is selected set score to 1.

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

o (a) The current in an external power cable.

- (b) An electrical charge in rest.

o (c) The output voltage of an aircraft battery.

If choice b is selected set score to 1.

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

- (a) Checking the AMM.

o (b) Look for a non-conductive clean work-table.
o (c) Placing a grounded wrist strap.

If choice a is selected set score to 1.

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

o (a) 100 V
o (b) 300 V

- (c) 35000 V

If choice c is selected set score to 1.

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

o (a) Level C
o (b) Level B

- (c) Level A

If choice c is selected set score to 1.

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

It is a list of....

o (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.

If choice c is selected set score to 1.

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).

If choice c is selected set score to 1.

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.

If choice a is selected set score to 1.

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.

If choice c is selected set score to 1.

67. What can you do to prevent the radome and radar for a lightning strike?

- (a) Use metallic paint on the radome.
- (b) Use of static dischargers.

- (c) Use of lightning diverters.

If choice c is selected set score to 1.

68. At what frequency does the Aircraft Communication Addressing and Reporting System (ACARS) operate?

- (a) 121.50 Mhz

- (b) 131.55 MHz

- (c) 225 MHz.

If choice b is selected set score to 1.

69. How long is the update interval for the navigational data base of the Flight Management System (FMS)?

- o (a) Weekly.
- o (b) Every day.
- • (c) Four weekly.

If choice c is selected set score to 1.

70. How many aircraft can the Airborne Collision Avoidance System II (ACAS II) track?

- o (a) Up to 3.
- o (b) Up to 30.
- • (c) Up to 45.

If choice c 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. When is information updating in the Electronic Library System (ELS) accomplished?

- • (a) By a gate link (WIFI connection) on the ground.
- o (b) Only during flight.
- o (c) Only during a line maintenance inspection.

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