

	Level			
	A	B1.1 B1.3	B1.2 B1.4	B2
<p><b>5.1 Electronic Instrument Systems</b></p> <p>Typical systems arrangements and cockpit layout of electronic instrument systems.</p>	1	2	2	3
<p><b>5.2 Numbering Systems</b></p> <p>Numbering systems: binary, octal and hexadecimal;</p> <p>Demonstration of conversions between the decimal and binary, octal and hexadecimal systems and vice versa.</p>	—	1	—	2
<p><b>5.3 Data Conversion</b></p> <p>Analogue Data, Digital Data;</p> <p>Operation and application of analogue to digital, and digital to analogue converters, inputs and outputs, limitations of various types.</p>	—	1	—	2
<p><b>5.4 Data Buses</b></p> <p>Operation of data buses in aircraft systems, including knowledge of ARINC and other specifications.</p>	—	2	—	2
<p><b>5.5 Logic Circuits</b></p> <p>(a)</p> <p>Identification of common logic gate symbols, tables and equivalent circuits;</p> <p>Applications used for aircraft systems, schematic diagrams.</p>	—	2	—	2
<p>(b)</p> <p>Interpretation of logic diagrams.</p>	—	—	—	2
<p><b>5.6 Basic Computer Structure</b></p> <p>(a)</p> <p>Computer terminology (including bit, byte, software, hardware, CPU, IC, and various memory devices such as RAM, ROM, PROM);</p> <p>Computer technology (as applied in aircraft systems).</p>	1	2	—	—
<p>(b)</p> <p>Computer related terminology;</p> <p>Operation, layout and interface of the major components in a micro computer including their associated bus systems;</p> <p>Information contained in single and multiaddress instruction words;</p> <p>Memory associated terms;</p> <p>Operation of typical memory devices;</p> <p>Operation, advantages and disadvantages of the various data storage systems.</p>	—	—	—	2

	Level			
	A	B1.1 B1.3	B1.2 B1.4	B2
<b>5.7 Microprocessors</b>	—	—	—	2
Functions performed and overall operation of a microprocessor;				
Basic operation of each of the following microprocessor elements: control and processing unit, clock, register, arithmetic logic unit.				
<b>5.8 Integrated Circuits</b>	—	—	—	2
Operation and use of encoders and decoders;				
Function of encoder types;				
Uses of medium, large and very large scale integration.				
<b>5.9 Multiplexing</b>	—	—	—	2
Operation, application and identification in logic diagrams of multiplexers and demultiplexers.				
<b>5.10 Fibre Optics</b>	—	1	1	2
Advantages and disadvantages of fibre optic data transmission over electrical wire propagation;				
Fibre optic data bus;				
Fibre optic related terms;				
Terminations;				
Couplers, control terminals, remote terminals;				
Application of fibre optics in aircraft systems.				
<b>5.11 Electronic Displays</b>	—	2	—	2
Principles of operation of common types of displays used in modern aircraft, including				
Cathode Ray Tubes, Light Emitting Diodes and Liquid Crystal Display.				
<b>5.12 Electrostatic Sensitive Devices</b>	1	2	2	2
Special handling of components sensitive to electrostatic discharges;				
Awareness of risks and possible damage, component and personnel anti-static protection devices.				
<b>5.13 Software Management Control</b>	—	2	1	2
Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programmes.				

	Level			
	A	B1.1 B1.3	B1.2 B1.4	B2
<b>5.14 Electromagnetic Environment</b>	—	2	2	2
Influence of the following phenomena on maintenance practices for electronic system:				
EMC-Electromagnetic Compatibility				
EMI-Electromagnetic Interference				
HIRF-High Intensity Radiated Field				
Lightning/lightning protection				
<b>5.15 Typical Electronic/Digital Aircraft Systems</b>	—	2	2	2
General arrangement of typical electronic/digital aircraft systems and associated BITE				
(Built In Test Equipment) testing such as:				
ACARS-ARINC Communication and Addressing and Reporting System				
ECAM-Electronic Centralised Aircraft Monitoring				
EFIS-Electronic Flight Instrument System				
EICAS-Engine Indication and Crew Alerting System				
FBW-Fly by Wire				
FMS-Flight Management System				
GPS-Global Positioning System				
IRS-Inertial Reference System				
TCAS-Traffic Alert Collision Avoidance System				