

**Nota:** la definizione di livello è quella indicata nell'appendice 1 alla Parte 66.

| <b>MODULE 5 - DIGITAL TECHNIQUES ELECTRONIC INSTRUMENT SYSTEMS</b>  | <b>Livello</b> |
|---|----------------|
| <b>5.1 Electronic Instrument Systems</b><br>Typical systems arrangements and cockpit layout of electronic instrument systems.   | Lev. 2         |
| <b>5.2 Numbering Systems</b><br>Numbering systems: binary, octal and hexadecimal;<br>Demonstration of conversions between the decimal and binary, octal and hexadecimal systems and vice versa.   | Lev. 1         |
| <b>5.3 Data Conversion</b><br>Analogue Data, Digital Data;<br>Operation and application of analogue to digital, and digital to analogue converters, inputs and outputs, limitations of various types.   | Lev. 1         |
| <b>5.4 Data Buses</b><br>Operation of data buses in aircraft systems, including knowledge of ARINC and other specifications.<br>Aircraft Network/Ethernet   | Lev. 2         |
| <b>5.5 Logic Circuits</b><br>(a) Identification of common logic gate symbols, tables and equivalent circuits;<br>Applications used for aircraft systems, schematic diagrams.  | Lev. 2         |
| <b>5.6 Basic Computer Structure</b><br>(a) Computer terminology (including bit, byte, software, hardware, CPU, IC, and various memory devices such as RAM, ROM, PROM);<br>Computer technology (as applied in aircraft systems).   | Lev. 2         |
| <b>5.10 Fibre Optics</b><br>Advantages and disadvantages of fibre optic data transmission over electrical wire propagation;<br>Fibre optic data bus;<br>Fibre optic related terms;<br>Terminations;<br>Couplers, control terminals, remote terminals;<br>Application of fibre optics in aircraft systems. | Lev. 1         |
| <b>5.11 Electronic Displays</b><br>Principles of operation of common types of displays used in modern aircraft, including Cathode Ray Tubes, Light Emitting Diodes and Liquid Crystal Display.  | Lev. 2         |
| <b>5.12 Electrostatic Sensitive Devices</b><br>Special handling of components sensitive to electrostatic discharges;<br>Awareness of risks and possible damage, component and personnel anti-static protection devices.   | Lev. 2         |
| <b>5.13 Software Management Control</b><br>Awareness of restrictions, airworthiness requirements and possible catastrophic effects of unapproved changes to software programmes   | Lev. 2         |
| <b>5.14 Electromagnetic Environment</b><br>Influence of the following phenomena on maintenance practices for electronic system:<br>EMC-Electromagnetic Compatibility<br>EMI-Electromagnetic Interference<br>HIRF-High Intensity Radiated Field<br>Lightning/lightning protection                          | Lev. 2         |
| Continua 5.15   |                |

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| <p><b>5.15 Typical Electronic/Digital Aircraft Systems</b><br/>         General arrangement of typical electronic/digital aircraft systems and associated BITE (Built In Test Equipment) testing such as:<br/>         ACARS-ARINC Communication and Addressing and Reporting System<br/>         ECAM-Electronic Centralised Aircraft Monitoring<br/>         EFIS-Electronic Flight Instrument System<br/>         EICAS-Engine Indication and Crew Alerting System<br/>         FBW-Fly by Wire<br/>         FMS-Flight Management System<br/>         GPS-Global Positioning System<br/>         IRS-Inertial Reference System<br/>         TCAS-Traffic Alert Collision Avoidance System<br/>         Integrated Modular Avionics<br/>         Cabin Systems<br/>         Information Systems</p>  | <p>Lev. 2</p>   |
| <p><b>MODULE 12 - HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS</b></p>   |   |
| <p><b>12.7 Instruments/Avionic Systems</b><br/> <b>12.7.1 Instrument Systems (ATA 31)</b><br/>         Pitot static: altimeter, air speed indicator, vertical speed indicator;<br/>         Gyroscopic: artificial horizon, attitude director, direction indicator, horizontal situation indicator, turn and slip indicator, turn coordinator;<br/>         Compasses: direct reading, remote reading;<br/>         Vibration indicating systems — HUMS;<br/>         Glass Cockpit;<br/>         Other aircraft system indication<br/> <b>12.7.2 Avionic Systems</b><br/>         Fundamentals of system layouts and operation of:<br/>         Auto Flight (ATA 22);<br/>         Communications (ATA 23);<br/>         Navigation Systems (ATA 34).<br/> <b>12.14 Landing Gear (ATA 32)</b><br/>         Construction, shock absorbing;<br/>         Extension and retraction systems: normal and emergency;<br/>         Indications and warning;<br/>         Wheels, tyres, brakes;<br/>         Steering;<br/>         Air-Ground sensing;<br/>         Skids, floats.</p> | <p><b>Livello</b></p> <p>Lev. 2</p> <p>Lev. 1</p> <p>Lev. 3</p> |
| <p><b>MODULE 15 - GAS TURBINE ENGINE</b></p>  |   |
| <p><b>15.11 Fuel Systems</b><br/>         Operation of engine control and fuel metering systems including electronic engine control (FADEC);<br/>         Systems lay-out and components.<br/> <b>15.18 Auxiliary Power Units (APUs)</b><br/>         Purpose, operation, protective systems.</p>   | <p>Lev. 2</p> <p>Lev. 2</p>                                     |

**Domande di esame (a risposta multipla): 100**

**Durata esame: 125 minuti**