| CASA module Examinations subjects | CASA mech basics exams equavelant | CASA avionic basics exams equavelant |
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| **Module 6 Materials and hardware (B1 & B2)** | | |
| **6.1 Aircraft materials ferrous** | | |
| **(a)** | | |
| Characteristics, properties and identification of common alloy steels used in aircraft; | BA | Nil |
| Heat treatment and application of alloy steels; | BA | Nil |
| **(b)** | | |
| Testing of ferrous materials for hardness, tensile strength, fatigue strength and impact resistance. | BA | Nil |
| **6.2 Aircraft materials — non-ferrous** | | |
| **(a)** | | |
| Characteristics, properties and identification of common non-ferrous materials used in aircraft; | BA | Nil |
| Heat treatment and application of non-ferrous materials; | BA | Nil |
| **(b)** | | |
| Testing of non-ferrous material for hardness, tensile strength, fatigue strength and impact resistance. | BA | Nil |
| **6.3 Aircraft materials — composite and non-metallic** | | |
| 6.3.1 Composite and non-metallic other than wood and fabric | BA or FP | Nil |
| **(a)** | | |
| Characteristics, properties and identification of common composite and non-metallic materials, other than wood, used in aircraft; | BA or FP | Nil |
| Sealant and bonding agents; | BA or FP | Nil |
| **(b)** | | |
| The detection of defects and deterioration in composite and non metallic material; | BA, FG, FI, or FP | Nil |
| Repair of composite and non-metallic material. | BA, FG, FI, or FP | Nil |
| **6.3.2 Wooden structures** | | |
| Construction methods of wooden airframe structures; | FD | Nil |
| Characteristics, properties and types of wood | FD | Nil |
| and glue used in aeroplanes; | FD | Nil |
| Preservation and maintenance of wooden structure; | FD | Nil |
| Types of defects in wood material and wooden structures; | FD | Nil |
| The detection of defects in wooden structure; | FD | Nil |
| Repair of wooden structure. | FD | Nil |
| Repair of wooden structure. | FD | Nil |
| **6.3.3 Fabric covering** | | |
| Characteristics, properties and types of fabrics used in aeroplanes; | FE | Nil |
| Inspections methods for fabric; | FE | Nil |
| Types of defects in fabric; | FE | Nil |

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| Repair of fabric covering. | FE | Nil |
| **6.4 Corrosion** | | |
| **(a)** | | |
| Chemical fundamentals; | BA | QB |
| Formation by galvanic action process, microbiological, stress; | BA | QB |
| **(b)** | | |
| Types of corrosion and their identification; | BA | QB |
| Causes of corrosion; | BA | QB |
| Material types, susceptibility to corrosion. | BA | QB |
| **6.5 Fasteners** | | |
| ***6.5.1 Screw threads*** | | |
| Screw nomenclature; | BA | QB |
| Thread forms, dimensions and tolerances for standard threads used in aircraft; | BA | Nil |
| Measuring screw threads; | BA | Nil |
| ***6.5.2 Bolts, studs and screws*** | | |
| Bolt types: specification, identification and marking of aircraft bolts, international standards; | BA | QB |
| Nuts: self-locking, anchor, standard types; | BA | QB |
| Machine screws: aircraft specifications; | BA | QB |
| Studs: types and uses, insertion and removal; | BA | Nil |
| Self tapping screws, dowels. | BA | Nil |
| ***6.5.3 Locking devices*** | | |
| Tab and spring washers, locking plates, split pins, pal-nuts, wire locking, quick release fasteners, keys, circlips, cotter pins. | BA | QB |
| ***6.5.4 Aircraft rivets*** | | |
| Types of solid and blind rivets: specifications and identification, heat treatment. | FG or FI | Nil |
| **6.6 Pipes and unions** | | |
| **(a)** | | |
| Identification of, and types of, rigid and flexible pipes and their connectors used in aircraft; | FA | Nil |
| **(b)** | | |
| Standard unions for aircraft hydraulic, fuel, oil, pneumatic and air system pipes. | FA | Nil |
| **6.7 Springs** | | |
| Types of springs, materials, characteristics and applications. | BA | Nil |
| **6.8 Bearings** | | |
| Purpose of bearings, loads, material, construction; | BA | Nil |
| Types of bearings and their application. | BA | Nil |
| **6.9 Transmissions** | | |
| Gear types and their application; | BA, FI, or FR | Nil |
| Gear ratios, reduction and multiplication gear systems, driven and driving gears, idler gears, mesh patterns; | BA, FI, or FR | Nil |
| Belts and pulleys, chains and sprockets. | Nil | Nil |
| **6.10 Control cables** | | |

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| Types of cables; | BB | Nil |
| End fittings, turn buckles and compensation devices; | BB | Nil |
| Pulleys and cable system components; | BB | Nil |
| Bowden cables; | BB | Nil |
| Aircraft flexible control systems. | BB | Nil |
| **6.11 Electrical cables and connectors** | | |
| Cable types, construction and characteristics; | BA | QB |
| High tension and co-axial cables; | BA | QB |
| Crimping; | BA | QB |
| Connector types, pins, plugs, sockets, insulators, current and voltage rating, coupling, identification codes. | BA | QB |