

Syllabus for JT: MSME

Part II – Technical (A, B, or C)

Section: A

Fundamentals of heat treatment equipment and operations for ferrous and non-ferrous materials, Materials testing equipment and operations: mechanical properties testing (strength, hardness, toughness, etc), thermal testing (dilatometry, calorimetry, etc), metallographic operations (cutting, grinding, polishing, optical microscopy, etc), Fundamentals of foundry and cast house operations and equipment (pattern and mold making, sand testing, melting and pouring, casting processes, solidification, casting defects, etc), lab safety protocols

Section: B

Basic electronics and instrumentation, applied physics (physics of materials testing such as resistivity, conductance, impedance, optical, magnetic measurements), lab safety protocols

Section: C

Basic about functioning and maintenance of common biological equipment such as autoclave, laminar flow hood, safety cabinet, incubators, water purification system, hot plates, centrifuge and so on sterilization protocols and methods, Contamination management, Procedures of preserving and reviving microbes and cell lines, Biosafety and chemical safety protocols and waste disposal, Other basic relevant characterisation methods