

**Syllabus for Written Test to the post of Jr. Technical Asst. (Machine Operation)-A to Technical Assistant (Machine Operation-A)- MFCP**

**1. Fundamentals of Metal cutting.**

Types of cutting tools, cutting tool materials, cutting tool nomenclature, cutting speeds and feeds, Calculation of cutting speed and feed, Tool life and wear,

**2. Machining Processes in Industry**

Types of Shaping machine, shaper mechanisms, shaping machine operations and tools used shaping machine.

Function of Lathe, Types of lathe, Lathe operations including thread cutting, Tools used in lathe operations, cutting tools used in lathe operations.

Types of milling machine, milling machine operations, attachments and work holding devices used in milling machine, Milling cutters and tools. Cutting speed feed and depth of cut.

Types of grinding machines, grinding operations, types of abrasives and their uses.

**3. Non- traditional machining processes**

Types of non-traditional machines, EDM- Principle and operation, Wire EDM Principle and operation.

**4. Cutting fluids**

Purpose of cutting fluids, Properties of cutting fluids, Types of cutting fluids.

**5. Engineering Tolerances & Surface technology**

Tolerance, fits and allowance, Types of fit, Hole basis and shaft basis system, Evaluation of surface quality, Surface finish symbols on drawings. Limits and Fits-Indian standard. Geometric Dimensioning and Tolerancing (GD&T).

**6. Shop floor Metrology & measuring instruments**

Types of measuring instruments like Vernier caliper, Micrometer, slip gauge, bore gauge and dial test indicators uses in shop floor and its error interpretations.

**7. CNC machines.**

CNC machines - axis of motion, classification of CNC system, position and motion control in CNC machines. G&M codes used in CNC programs. Job setting, Tool offset and work offset.

**Reference Books**

1. Elements of workshop technology volume 2 – Machine tools. By S.K.Hajra choudhry
2. Production Technology- By HMT.

  
DEPUTY DIRECTOR (ADMIN)