

## **Syllabus for Written Test to the post of TECHNICIAN (FITTER) – MFCP**

### **MARKING AND MARKING TOOLS**

Marking media- Linear measurement –Scribers-Dividers –Datum- Calipers- Types of marking punches-Surface gauge- V' Blocks- Surface plate- marking off table-Angle plates-parallels and Combination set

### **HAND TOOLS AND MEASURING TOOLS**

Hammers- Types of vice-C clamp- types of Spanners-pliers-screw driver-Types of Steel rules-Try square and its types -jenny caliper-straight edge-system of units -Measurements of angles- Angular measuring instruments (Semi - precision) -Measuring standards (English & metric)

### **CUTTING TOOLS AND OPERATIONS**

Elements of a file- Cut of files –Grades-shapes- - Types of files- Needle files- Special files- Pinning of files -Care and maintenance -Convexity of files- Filing techniques- Hacksaw frames and blades- types of chisels-scraper-drilling-types of drills-drilling machines-reamers –hand taps-threading dies- Drilling - Cutting speed, feed and RPM - drill holding devices - Counter sinking-Radius/Fillet gauge, feeler gauge- grinding-standard grinding wheel marking system-grinding machines.

### **PRECISION INSTRUMENTS**

Micrometers –dial caliper- Vernier calipers -Vernier height gauge- types- working principle- vernier bevel protractor-comparator-measuring errors, Gauges-types-slip gauges-angle gauge-sinebar-, Jigs and fixtures- Limits and fits-interchangeability-tolerance-allowances- shaft and hole basis system.

### **FASTENERS AND POWER TRANSMISSION**

Types of screw threads-fastners-keys-bolts-washers-studs-setscrews-cotters-pins-couplings-circlips-soldering-brazing-rivetting-types of rivets-defects in riveting-taper-springs Belt and belting-belt fastenings-slip-creep-crowning-dressing-types of gears-clutches-bearings types- bearing materials

### **METALS AND HEAT TREATMENTS**

Ferrous and non ferrous metals-cast iron types-steel making process-types of steels-alloys-heat treatment process- annealing-normalising-hardening process-case hardening-hardness testing-impact testing

### **FORGING**

Forge-Refractory materials-forging hand tools- cuttings tools-anvils-forging of steels-forging operations-defects in drawing out-defects in upsetting

## **SHEET METAL WORK**

Types of snips-mallet-sheet metal hand tools-compass- stakes-types-uses - metals used in sheet metal work-sheet metal operations-joints-bending machines.

## **WELDING**

General safety-tools and equipments used in gas welding-gases used in welding-types and uses of oxy-acetylene flames- acetylene gas generators-welding nozzles-melting points of common metals-flashback-backfire-gas welding techniques-joints-arc welding machines-welding defects-inspection of welds

## **LATHE**

Parts of lathe-specification of lathe-back gear mechanism-work holding devices-cutting tools-tool angles-cutting tool materials-lathe operations-thread cutting-cutting speed-feed-depth of cut-safety in lathe work

## **HOSPITAL FITTING WORKS**

Basic knowledge in the repair and maintenance of Hospital beds, wheel chairs, trolleys, laundry and dietary equipments, compressors, pumps etc



DEPUTY DIRECTOR (ADMN)