

DETAILED SYLLABUS FOR THE POST OF MECHANIC

(Ayurveda College) - Direct Recruitment

(CAT.NO: 728/2022)

MODULE 1 - GENERAL HAND TOOLS (10 MARKS)

File, Specification, Types of files, Hacksaw frame, Types, Hacksaw Blade, Chisels Type, Uses, Spanner Types, Uses, Screw Drivers- types, Uses, Different Pliers, Uses, Try square, Steel Rule, Punches, Hammer, Types, Combination set, Surface plate

MODULE 2 THREADS & DIFFERENT FORMS (MARKS 10)

Definition of thread, Uses of threads, Terminology of threads, Types of threads,

Elements of threads, Root, Crest, Flank, Angle of thread, Major diameter, Minor diameter, Helix angle, Start of thread, Single start thread, Multi start thread, Uses and identification of multi start thread, V thread, Metric thread, BSW thread, BA , thread, BSF thread, Square thread, Trapezoidal thread, Buttress thread, Knuckle threads, Acme thread and uses of these threads

MODULE 3 - BASIC ELECTRICITY (10 MARKS)

Electricity concept, Uses of electricity, AC&DC Current, Comparison, Electrolysis process Potential Difference, Voltage, Current, Resistance, Units, Conductor, Insulator Types of connections, Serial, Parallel connections Measuring Instruments, Ohm ´s law, Ammeter, Voltmeter, Multimeters, Electrical Safety Precautions

MODULE 4 - METEIRAL SCIENCE (10 MARKS)

Difference between iron and steel, Ferrous metals, Non-Ferrous Metals, Alloys, Different alloys and their uses, Composition of different alloys, Properties of Metals, Physical& Mechanical

properties of metals, Electrical Properties, Chemical Properties, Melting Point of Different Metals & Alloys

MODULE 5 - HEAT, TEMPERATURE & PRESSURE (8 MARKS)

Concept of Heat & Temperature, Effects of heat, Difference between Heat & Temperature, Units of Heat, Scales of Temperature, Celsius, Fahrenheit, Kelvin, Temperature measuring Instruments, Transmission of heat, Conduction, Convection, and Radiation, Concepts of pressure, Units of pressure, Gauges used for measuring pressure

MODULE 6 - MOULDS, MOULDING & CASTING (7 MARKS)

Different casting processes, Sand casting, Shell moldings, Gravity die casting, Pressure die casting, Plaster mold casting, Investment casting, Centrifugal casting, Mold making procedure, Venting of molds

MODULE 7 - PUMPS, MOTORS & AIR COMPRESSORS (5 MARKS)

Working principle of pumps, motors, & air compressors, Types of pumps, motors, & air compressors, Specification of pumps, motors, & air compressors

MODULE 8 - PRECISION MEASURING INSTRUMENTS (8 MARKS)

Vernier calipers. Types, Parts, Uses, least count, Micrometer, Parts Specification Uses, Types, Vernier height gauge, Uses, least count, Depth micrometer, , Uses, least count, & Specifications, Inside micrometer, Types, Uses, least count, & Specifications, Digital calipers, Digital micrometers, Specifications

MODULE 9 - BASIC WORKSHOP CALCULATIONS (7 MARKS)

Units and measurements, Fundamental and derived units, Units for length, mass, and time, Fractions, Proper fractions, Improper fractions, Ratio and Proportions, Area of square, rectangle, triangle and circle, Mass & weight

MODULE 10 - LIMIT, FIT & TOLERANCE (8 MARKS)

Limit system, Upper limit, Lower limit, Maximum limit of size, Minimum limit of size, Deviation, Upper deviation, Lower deviation, Zero line, Fits, Clearance fit,

Interference fit, Transition fit, Fundamental deviation, Hole basis system, Shaft basis system

MODULE 11 SAFETY PRECAUTIONS (5 MARKS)

Occupational safety, Safety and general precautions in industry and shop

Floor, first aid, Importance of house keeping

MODULE 12 SOLDERING, WELDING AND BRAZING (7 MARKS)

Soldering process, Soldering iron and parts, Solders, Types of solders, Flux, Classes

Of flux, Basic welding process, Arc welding, Gas welding, Types of welding joints, Oxy acetylene gas welding, Braze welding, Brazing, Filler rod for brazing

MODULE 13 SURFACE FINISH (5 MARKS)

Surface texture, Roughness, Waviness, Ra values, Surface texture measuring instruments and their parts, Roughness grade number, Roughness symbols

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.