



অসম লোকসেৱা আয়োগ

ASSAM PUBLIC SERVICE COMMISSION

Jawaharnagar, Khanapara, Guwahati-781022.

SYLLABUS

(Bachelor Degree Standard)

Screening Test (OMR based Objective Type) for recruitment to the post of Assistant Engineer (Civil/Mechanical/Electrical/Chemical) under Public Health Engineering Department

(Advt. No. 28/2023 dated 31.10.2023)

PAPER-II

Mechanical Engineering

(Multiple Choice Objective Type Questions)

Full Marks: 100 Marks

Time: 2-00 hours

- Statics** : Simple application of equilibrium equations.
- Dynamics** : Simple applications of equations of motion, simple harmonic motion, workenergy, power.
- Theory of Machines** : Simple examples of links and mechanism, Classification of gears, standard gear tooth profiles wheel types of governors, static(s) and dynamic balancing, Simple examples of vibration of bars, Whirling of shafts.
- Mechanics of Solids** : Stress strain, Hook's Law, elastic moduli, bending moments and shearing force diagrams for beams, Simple bending and torsion of beams, Spring, Thin walled cylinders, Mechanical properties and material testing.
- Manufacturing Science** : Mechanics of metal cutting tool life economics of machining cutting, tool materials. Basic machining processes, types of machine tools, transfer lines, Shearing drawing spinning, rolling forging extrusion, Different types of casting and welding methods.
- Production Management(s)** : Method and time study, motion, economy and work space design, operation and flow process charts, Product design and constant selection of manufacturing process, Break even analysis, Site Selection of equipment for job, Shop and Mass production, Dulling dispatching, Routing.

- Thermodynamics** : Heat, work and temperature, First and Second Laws of thermodynamics, Carnot Rankine, Otto and Diesel- Cycles.
- Fluid Mechanics** : Hydrostatics, Continuity equation, Bernoulli's theorem, Flow through pipes, Discharge measurement, Laminar and Turbulent flow, Concept of boundary layer.
- Heat Transfer** : One dimensional steady, state conduction through walls and cylinders, Fins, Concepts of thermal boundary layer, Heat transfer coefficient, Combined heat transfer, Coefficient, Heat ex-exchangers.
- Energy Conversion** : Compression and spark ignition engines, Compressors, Fans and Blowers, Hydraulic pumps and turbines, Thermal turbo machines, Boilers, Flow of steam through nozzles, Layout of power plants.
- Environmental Control** : Refrigeration cycles, refrigeration equipment, its operation and maintenance, Important refrigerants, Psychometrics comfort, Cooling and dehumidification.

04.11.23

Controller of Examinations
Assam Public Service Commission,
Jawaharnagar, Khanapara, Guwahati-22
