



Recruitment Section

University of Kashmir

NAAC Accredited Grade A++

NOTICE

This is for the information of all the eligible candidates that the scheme for OMR Based Written Test for the posts of Junior Engineer (Civil, Electrical & Mechanical) advertised by this University vide Advertisement Notice No. **05 of 2026 dated 30-03-2026** is as under:

Maximum Marks	100
Number of objective type questions	100
Marks allotted to each correct answer	01
Negative Marks for each incorrect answer	0.25 per question
Time allowed	110 minutes

Further, the syllabi for the OMR Based Written Test for the posts of Junior Engineer (Civil, Electrical & Mechanical) are appended with this notice as under:

S. No	Post	Department/ Campus	Annexure
1.	Junior Engineer (Civil)	Main Campus	Annexure-A
2.	Junior Engineer (Electrical)	North Campus	Annexure-B
3.	Junior Engineer (Mechanical)	South Campus	Annexure-C

However, the date for the OMR Based Written Test shall be notified separately.

By Order,

**Sd/-
Deputy Registrar
(Recruitment)**

No. KU/Rect. /Notice-Scheme & Syllabi/2026
Dated: 11-05-2026



Recruitment Section

University of Kashmir
NAAC Accredited Grade A++

Annexure-A

Syllabus for Junior Engineer (Civil)

1. Surveying:

Importance of surveying, principles and classifications, measurements of distance and directions, chain surveying, compass surveying, leveling, tachometry, theodolite, traversing, contouring, plane table surveying, curves.

2. Mechanics and Structural analysis:

Introduction, Concept of rigid body scalar and vector quantities, Laws of force, moment, friction, Centre of gravity, simple machines, torsion, Properties of material, Bending moment and shear force in statically determinate beams. Simple stress and strain relationship. Stress and strain in two dimensions, principal stresses, stress transformation. Simple bending theory, flexural and shear stresses, unsymmetrical bending, shear Centre. Thin-walled pressure vessels, uniform torsion, buckling of column, combined and direct bending stresses. slope and deflection, Analysis of trusses

3. RCC Structures:

Concrete technology, Ingredients of concrete, water cement ratio, workability properties of concrete, admixtures, special concretes, Nondestructive tests, basics of mix design. Concrete design-basic working stress and limit state design concepts, analysis of ultimate load capacity and design of members subjected to flexure, shear, compression and torsion by limit state methods. Basic elements of pre-stressed concrete, analysis of beam sections at transfer and service loads, one-way slab, two-way slab.

4. Soil Mechanics:

Origin of soils, properties, soil classification, three phase system, fundamental definitions, relationship and interrelationship, flow of water through soils, permeability & seepage, effective stress principle, deformation of soils, consolidation, compaction, shear strength characteristics, plate load test, SPT, Density control, Measurement of field density by core cutter and sand replacement method, soil exploration, bearing capacity and its methods

5. Fluid Mechanics and Hydraulics:

Properties of fluids, hydrostatic pressure, measurement of pressure, flow measurements, flow through pipes, flow through open channels, hydraulic pumps, principle of conservation of mass, momentum, energy and corresponding equations, potential flow, applications of momentum and Bernoulli's equation, laminar and turbulent flow, flow in pipes, pipe networks. Concept of boundary layer and its growth. Uniform flow, critical flow and gradually varied flow in channels, specific energy concept, hydraulic jump Forces on immersed bodies, flow measurements in channels, tanks and pipes. Dimensional analysis and hydraulic modeling Kinematics of flow.



Recruitment Section

University of Kashmir
NAAC Accredited Grade A++

6. Irrigation Engineering:

Introduction, water requirement of crops, hydrological cycle, Dams, Canals, dams, canal head works and regulatory works, cross drainage works, hydraulic structures, river training works, water-logging, drainage, ground water recharge, well hydraulics.

7. Water supply and waste water Engineering:

Introduction, quantity of water, quality of water, water treatment, conveyance of water, laying out of pipes, building water supply, water supply fixtures and installation, plumbing, sewerage system, laying and construction of sewers, sewage characteristics, Methods of disposal, sewage treatment, building drainage, air and noise pollution

8. Highway Engineering:

History of development of highway and planning, Definitions of various terms used in highway engineering., Methods of road construction, IRC classification, Highway surveys and plans Geometric design, Different types of road materials in use, Binders, Types of pavement, CBR method, sub grade preparation, WBM, WMM, Bituminous Macadam, dense bituminous macadam, special problems in hill road.

9. Railway Engineering:

History of Indian railways, Gauges used, permanent way its components, Types of rails, creep, welding, Rail fixtures and fastenings, Signaling, Points and Crossings, Bridge terminology, classification, components, foundations.

10. Construction planning management:

Network diagrams, PERT-CPM, cost optimization contracts, tenders, depreciation, valuation, organization, measurement books, cash book, functions of management, construction planning, quality control, inventory control, Estimation and costing definitions, methods of estimation and type of estimates.



Recruitment Section

University of Kashmir
NAAC Accredited Grade A++

Annexure-B

SYLLABUS FOR THE POST OF JUNIOR ENGINEER (ELECTRICAL)

1. Electric Circuits and Fields:

Basic concepts: Concepts of resistance, inductance, capacitance and various factors effecting them.. Circuit laws: ohms law KCL, KVL, node and mesh analysis, resonance, ideal current and voltage sources, Source conversions Thevenin's, Norton's and Superposition and Maximum Power Transfer theorems, Simple Circuit solution using network theorems. Three phase circuits; Ampere's and Biot-Savart's laws; inductance; dielectrics; capacitance.

2. Control Systems:

Basic control system components; block diagrammatic description, reduction of block diagrams. Open loop and closed loop (feedback) systems and stability analysis of these systems.

3. Electrical and Electronic Measurements:

Bridges and potentiometers; PMMC, moving iron, dynamometer and induction type instruments: Extension of range, measurement of voltage, current, power, energy and power factor; instrument transformers; digital voltmeters and multimeters; phase, time and frequency measurement; Q-meters; oscilloscopes. Transducers: measurement of displacement, flow and temperature, Megger. Measurements of active and reactive power, Measurement of Energy.

4. Electronic Devices and Circuits:

Energy bands in silicon, intrinsic and extrinsic silicon. Carrier transport in silicon: diffusion current, drift current, mobility, and resistivity. p-n junction diode, Zener diode, tunnel diode, BJT, JFET, MOS capacitor, MOSFET, LED, avalanche photo diode .Small Signal Equivalent circuits of diodes, BJTs, MOSFETs. Simple diode circuits, clipping, clamping, rectifier. Biasing and bias stability of transistor and FET amplifiers. Single and multi-stage, tuned voltage, operational, feedback, and power amplifiers. Frequency response of amplifiers. Simple op-amp circuits. Filters. Sinusoidal oscillators; criterion for oscillation; single-transistor and op-amp configurations. Function generators and wave-shaping circuits, 555 Timers IC and its applications. Power supplies.

5. Digital Electronics and Microprocessor:

Number systems: Binary, decimal, octal, hexadecimal, BCD number systems and their conversions, Binary and hexadecimal addition, subtraction multiplication, 1's and 2's complement methods of addition/subtraction. Boolean algebra, minimization of Boolean functions; logic gates; digital IC families (DTL, TTL, ECL, MOS, CMOS). Combinatorial circuits: arithmetic circuits, code converters, multiplexers, decoders, PROMs. Sequential circuits: latches and flip-flops, counters and shift-registers. ADCs, DACs. Semiconductor memories. Microprocessor (8085): architecture, instruction set, programming, memory and I/O interfacing. Study of peripheral chips-8251,8155, 8257,8259.

6. Power Electronics and Drives:



Recruitment Section

University of Kashmir

NAAC Accredited Grade A++

Semiconductor power diodes, transistors, thyristors, triacs and MOSFETs - static characteristics and principles of operation; triggering circuits; phase control rectifiers; bridge converters - fully controlled and half controlled; Choppers and Inverters; concepts of adjustable speed dc and ac drives.

7. Electrical Machines:

Single phase transformer - equivalent circuit, phasor diagram, tests, regulation and efficiency; three phase transformers - connections, parallel operation; autotransformer, Energy conversion principles, Electro-mechanical energy conversion ; DC machines types, windings, generator characteristics, armature reaction and commutation, starting and speed control of motors; three phase induction motors- principles, types, performance characteristics, starting and speed control; single phase induction motors; synchronous machines - performance, regulation and parallel operation of generators, motor starting, characteristics and applications; servo and stepper motors. Braking of DC and AC motors

8. Power Systems:

Basic power generation concepts; transmission line models and performance; cable performance, insulation; corona and radio interference; distribution systems; power factor correction; economic operation; symmetrical components; principles of over-current, differential and distance protection; Generator, feeder, transformer and bus-bar protection, Lightning protection; solid state relays and circuit breakers; Sub-Station Practices, Load frequency control, Tariffs, Earthing. Utilisation of Electrical energy: Illumination, electrical heating and welding, electroplating.



Recruitment Section

University of Kashmir
NAAC Accredited Grade A++

Annexure-C

Syllabus for Junior Engineer (Mechanical)

Theory of Machines and Machine Design:

Four bar linkage and link motion, Flywheels and fluctuation of energy, Power transmission by belts-V-belts and Flat belts. Gears-Type of gears, gear profile and gear ratio calculation. Cams. Governors-Principles and classification. Design of keys, shafts, Riveted joint, couplings.

Engineering Mechanics and Strength of Materials:

Laws of forces, Equilibrium of Forces, Moment of Inertia, Laws of motion. Friction. Concept of simple machines, M A, V R, %age. Concepts of stress and strain, Elastic limit and elastic constants. Bending moments and shear force diagram. Stress in composite bars. Torsion in circular shafts. Columns: Euler's and Rankine's theories. Thin-walled pressure vessels.

Thermal Engineering and Refrigeration & Air-conditioning:

Thermodynamics: Heat, work and temperature, First and second laws of thermodynamics. Carnot, Rankine, Otto and Diesel Cycles. P-v & P-T diagrams H₂O. Saturated, wet & superheated steam. Definition of dryness fraction of steam, degree of superheat of steam. Rankine cycle of steam: Simple Rankine cycle, plot on P-V, T-S, h-s planes, Rankine cycle efficiency with & without pump work. Concept of COP, Carnot Cycle, Vapour compression cycle. Refrigerants. Psychrometry, DBT, WBT, DPT.

Fluid Mechanics & Machinery:

Properties & Classification of Fluids, Newton's law of viscosity, Fluid Statics, Measurement of Fluid Pressure by Manometers, U-tube, Inclined tube. Fluid Kinematics: Stream line, laminar & turbulent flow, external & internal flow, continuity equation. Dynamics of ideal fluids: Bernoulli's equation, Total head; Velocity head; Pressure head. Measurement of Flow rate, Basic Principles & working of Venturi meter, Pitot tube, Orifice meter. Hydraulic Turbines & Centrifugal Pumps

Material Science & Production Engineering:

Structure of metals, Space lattice, Unit cell, BCC, FCC etc. Iron carbon diagram, Classification of Steels: mild steel & alloy steel. Heat treatment of steel. Welding - Arc Welding, Gas Welding, Resistance Welding, Special Welding Techniques i.e. TIG, MIG. Brazing & Soldering, Welding Defects & Testing. Foundry & Casting methods, defects, different casting processes. Forging, Extrusion etc. Metal



Recruitment Section

University of Kashmir

NAAC Accredited Grade A++

cutting principles, cutting tools. Basic Principles of machining with Lathe, Milling, Drilling, Shaping, Grinding. Machine tools & manufacturing processes.

Metrology and Automobile Engineering:

Tools used in Linear Measurements, Angular Measurement, Surface finish. Limits, fits & Tolerance, Error, Classification of Automobiles. Transmission, Steering, Braking, Suspension system. IC Engine Performance, IC Engine Combustion process, Cooling and Lubrication system in I.C Engine

Industrial Management and CAD/CAM:

Planning, Organizing, Leading, Controlling. Inventory Control, Inspection & Quality Control. Basic concepts of CAD/CAM. NC, DNC, CNC machines.
