

The tentative Syllabus of Online Exam for selection to the posts of Vidyut Sahayak (JE) will be including but not limited to following topics and emphasis could differ.

**VIDYUT SAHAYAK – JUNIOR ENGINEER (ELECTRICAL)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Electrical Engineering covering following topics (60%)**

- Engineering Mathematics
- Electric Circuits
- Electromagnetic Fields
- Signals and Systems
- Electrical Machines
- Power Systems
- Control Systems
- Electrical and Electronics Measurements
- Analog and Digital Electronics
- Power Electronics

**Section-IV : Computer Knowledge (10%)**

**Section-V : Gujarati Language & Grammer (10%)**

  
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## **VIDYUT SAHAYAK – JUNIOR ENGINEER (MECHANICAL)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Mechanical Engineering covering following topics (60%)**

- Engineering Mathematics
- Applied Mechanics and Design
  - Engineering Mechanics
  - Mechanics of Materials
  - Theory of Machines
  - Vibrations
  - Machine Design
- Fluid Mechanics and Thermal Sciences
  - Fluid Mechanics
  - Heat-Transfer
  - Thermodynamics
  - Applications
- Materials, Manufacturing and Industrial Engineering
  - Engineering Materials
  - Casting, Forming and Joining Processes
  - Machining and Machine Tool Operations
  - Metrology and Inspection
  - Computer Integrated Manufacturing
  - Production Planning and Control
  - Inventory Control
  - Operations Research

**Section-IV : Computer Knowledge (10%)**

**Section-V : Gujarati Language & Grammer (10%)**

  
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**VIDYUT SAHAYAK – JUNIOR ENGINEER (INSTRUMENTATION & CONTROL)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Instrumentation & Control Engineering covering following topics (60%)**

- Engineering Mathematics
- Instrumentation Engineering
  - Electrical Circuits
- Signals and Systems
- Control Systems
- Analog Electronics
- Digital Electronics
- Measurements
- Sensors and Industrial Instrumentation
- Communication and Optical Instrumentation

**Section-IV : Computer Knowledge (10%)**

**Section-V : Gujarati Language & Grammer (10%)**

  
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**VIDYUT SAHAYAK – JUNIOR ENGINEER (METALLURGY)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Metallurgy Engineering covering following topics (60%)**

- Engineering Mathematics
- Thermodynamics and Rate Processes
- Extractive Metallurgy
- Physical Metallurgy
- Mechanical Metallurgy
- Manufacturing Processes

**Section-IV : Computer Knowledge (10%)**

**Section-V : Gujarati Language & Grammer (10%)**

  
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## **VIDYUT SAHAYAK – JUNIOR ENGINEER (CIVIL)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Civil Engineering covering following topics (60%)**

- Engineering Mathematics
- Structural Engineering
  - Construction Materials & Management
  - Concrete Structures
  - Steel Structure
- Soil Mechanics & Foundation Engineering
- Water Supply and Sanitation
- Water & waste water
- Rain Water Harvesting
- Water Proofing
- Sewage Treatment Plants and Treated Sewage Water
- Municipal Solid Waste Management
- Road / Railways

**Section-IV : Computer Knowledge (10%)**

**Section-V : Gujarati Language & Grammer (10%)**

  
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## **VIDYUT SAHAYAK – JUNIOR ENGINEER (ENVIRONMENT)**

**Section : I General Knowledge (10%)**

**Section : II English Knowledge (10%)**

**Section : III Environment Engineering covering following topics (60%)**

- Environmental Engineering Chemistry
- Elements of Chemical Engineering & Chemical Engineering Processes
- Fluid Mechanics
- Environmental Science – Basic
- Environmental Sciences - Advanced
- Basics of Structural Engineering
- Environmental Microbiology
- Ecology and Remote Sensing
- Water Pollution & Control
- Advanced Environmental Instrumentation
- Physical & Chemical Treatment
- Environmental Resources
- Air Pollution Control and Management
- Biological Process for Wastewater Treatment
- Occupational Health & Safety
- Advanced Wastewater Treatment Technologies
- Industrial Water Pollution & Control
- Cleaner Production and Waste Utilization
- Environmental Monitoring and Data Management
- Environmental Impact Assessment
- Treatment Process Design and Drawing
- Environmental Legislation and Audit
- Ground Water Contamination

  
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- Hazardous waste management
- Development of environmental mitigation measures
- Development of environmental management and plans

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**Section-V : Gujarati Language & Grammer (10%)**

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