

**स्किल/ट्रेड टेस्ट और लिखित परीक्षा हेतु आवश्यक अनुदेश /**

**Important instructions for Skill/Trade & Written Test examination**

**Post - Technician**

- 1) परीक्षा हेतु प्रवेश पत्र आपको किसी प्रकार के चयन से सम्बंधी कोई गारंटी नहीं देता है ।  
The admit card for the examination does not, in any way, guarantee the selection for the post applied for.
- 2) अभ्यर्थियों से अनुरोध है कि विज्ञापन में वर्णित अर्हता/पात्रता को पढ़ कर अपनी अर्हता स्वयं सुनिश्चित कर लें और आवेदन प्राप्त होने की अंतिम तिथि को पूर्णतया पात्र होने की दशा में ही स्किल/ट्रेड टेस्ट परीक्षा में सम्मिलित हों ।  
Candidates are advised to read carefully the eligibility criteria as mentioned in the advertisement and they should appear in the Skill/Trade Test exam only after ensuring their eligibility on the closing date of the receipt of the applications.
- 3) अभ्यर्थी यह नोट करें कि परीक्षा के सभी चरणों में उनका प्रवेश निर्धारित अर्हता मापदंड को संतुष्ट करने की शर्त पर पूर्णतया अनंतिम है। आगे जाँच होने पर यदि आवेदन पत्र में किया गया कोई दावा सही नहीं पाया जाता है, तो अभ्यर्थन निरस्त कर दिया जाएगा।  
Candidates should note that their admission to all stages of examination will be purely **PROVISIONAL** subject to satisfying the prescribed eligibility criteria. On further Scrutiny if, any claim made in the application is not found substantiated, the candidature will be cancelled.
- 4) अपने प्रवेश पत्र के साथ पहचान के प्रमाण के लिए अपनी नवीनतम रंगीन फोटो और आईडी जैसे ड्राइविंग लाइसेंस, मतदाता आईडी कार्ड, आधार कार्ड, पैन कार्ड, पासपोर्ट, राज्य/केन्द्रीय सरकार द्वारा जारी किया गया आईडी कार्ड इत्यादि की मूल तथा एक स्वप्रमाणित छायाप्रति लेकर उपस्थित हों ।  
Candidate are required to bring their recent coloured Photo and original as well as a self-attested photocopy of their ID proof e.g. Driving License, Voter ID Card, Adhaar Card, PAN Card, Passport, State/Central Government issued ID card etc.
- 5) The Syllabus and pattern of Written examination will be as follows:-

<b>Mode of Examination</b>	Objective Type Multiple Choice Examination
<b>Medium of Questions</b>	The questions will be set both in English and Hindi except the questions on English Language.
<b>Standard of exam</b>	SSC + ITI / XII <sup>th</sup> Standard (Syllabus attached)
<b>Papers of Exam</b>	There will be three papers (Paper-I, Paper-II & Paper-III).

**Paper-I (Time Allotted - 1 hour) [Timing: 10:30 A.M. to 11:30 A.M.]**

Subject	No. of questions	Maximum Marks	Negative Marks
<b>Mental Ability Test*</b>	50	100 (two marks for every correct answer)	<u>There will be no negative marking in this paper</u>

\*Mental Ability Test will be so devised so as to include General Intelligence, Quantitative Aptitude, Reasoning, Problem Solving, Situational judgement etc.

**Paper-II (Time Allotted - 30 minutes) [Timing: 12:00 Noon to 12:30 P.M.]**

Subject	No. of questions	Maximum Marks	Negative Marks
<b>General Awareness</b>	25	75 (three marks for every correct answer)	One negative mark for every wrong answer
<b>English Language</b>	25	75 (three marks for every correct answer)	One negative mark for every wrong answer

**Paper-III (Time Allotted - 1 hour) [Timing: 1.00 P.M. to 2:00 P.M.]**

Subject	No. of questions	Maximum Marks	Negative Marks
<b>Concerned Subject</b>	50	150 (three marks for every correct answer)	One negative mark for every wrong answer

The multiple choice questions have to be answered by darkening the appropriate circle on Answer Sheet by black pen.

- 6) अभ्यर्थी उत्तर पत्र (Answer Sheet) में दिये गए निर्धारित स्थान के अलावा अपने उत्तर पत्र में किसी भी तरह का व्यक्तिगत चिन्ह, नाम, अनुक्रमांक आदि ना लिखें। ऐसा किए जाने पर उनका अभ्यर्थन निरस्त किया जा सकता है।  
Candidates should not write/make any personal symbol, name, roll number on any place in their answer sheet except for the prescribed space. In case they do so, their candidature may be cancelled.
- 7) अभ्यर्थियों से अनुरोध है कि वे परीक्षा के लिए निर्धारित समय से एक घंटे पूर्व परीक्षा स्थल पर पहुंचें। परीक्षा शुरू होने के पश्चात किसी भी परिस्थिति में परीक्षा केन्द्र में प्रवेश नहीं दिया जाएगा।  
Candidates are advised to reach examination centre **One hour before the scheduled time.** Candidates will not be permitted to enter the Examination Center in any circumstance after commencement of the examination.
- 8) अभ्यर्थियों को उनके अपने हित में सलाह दी जाती है कि वे अपने साथ संवाद के उपकरण जैसे मोबाईल फोन तथा अन्य इलेक्ट्रॉनिक गैजेटस आदि परीक्षा स्थल पर ना लाएँ। ऐसी वस्तुएँ जैसे बैग, पुस्तक, नोट्स आदि भी परीक्षा कक्ष के अंदर लाना अनुमन्य नहीं है। अभ्यर्थियों द्वारा अपने साथ लाई हुई वस्तुओं की सुरक्षा का दायित्व स्वयं अभ्यर्थियों का होगा।  
Candidates are advised in their own interest not to bring any instruments of communication like mobile phone electronic gadgets etc to the examination venue. Items like bag, book notes etc are also not allowed inside the examination hall. Candidates themselves will be responsible for the safety of any items brought by them to the examination.
- 9) अभ्यर्थी द्वारा परीक्षा कक्ष में किसी भी सामग्री का आपस में आदान प्रदान अनुमन्य नहीं है। परीक्षा केन्द्र में किसी भी प्रकार के अनाचार/अनुचित तरीकों में रत पाया जाना अभ्यर्थी को अयोग्य कर देगा।  
Candidates are strictly prohibited to exchange anything in the examination hall. Indulging in any malpractice/unfair means in the examination centre will disqualify the candidate.
- 10) प्रवेश पत्र में दिए गए विवरणों में कोई विसंगति होने पर तुरन्त कार्यालय को सूचित करें।  
Please inform this office immediately in case of any discrepancy in details given in the admit card.
- 11) केवल ट्रेड/स्किल टेस्ट क्वालिफाई करने वाले उम्मीदवारों को ही लिखित परीक्षा में सम्मिलित होने की अनुमति दी जाएगी। मेरिट लिस्ट लिखित परीक्षा के आधार पर तैयार की जायेगी।  
Only those candidates, who will qualify in the Skill/Trade Test, will be allowed to appear in the written examination. The merit list will be prepared on the basis of written examination.
- 12) प्रवेश पत्र को भविष्य के संदर्भों हेतु संभाल कर रखें।  
Please keep admit card safely for future references.

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## **Syllabus for Technician (1)( Electrical) Post Code :T0116**

**Occupational Safety and Health** Basic safety introduction, Personal protection. Basic injury prevention, Basic first aid, Hazard identification and avoidance, safety signs for Danger, Warning, caution and personal safety message. Use of Fire extinguishers. Visit and observation of sections. Various safety measures involved in the Industry. Elementary first Aid. Concept of Standard.

Identification of Trade-Hand tools- Specifications , Uses and their care maintenance.  
Explanation, Definition and properties of conductors, insulators and semi-conductors.  
Wires/cable & its specification.

Introduction of National Electrical Code Voltage grading of different types of Insulators, Temp. Rise permissible.

Types of wires and cables standard wire gauge. Specification of wires and Cables-insulation and voltage grades -Low , medium and high voltage Precautions in using various types of cables / Ferrules Types of wire joints & uses.

Common Electrical wiring Accessories, their specifications in line with NEC - Explanation of switches, lamp holders, plugs and sockets. Developments of domestic circuits, Alarm & Switches, Use & specification of Fire alarm, MCB, ELCB, MCCB. Application of battery/cell in Inverter, Battery Charger, UPS, etc.

Types of drills description and drilling machines, proper use, care and maintenance. Description of taps and dies, types of rivets and riveted joints. Use of thread gauge.

Active and Reactive power, Simple problems on A.C. circuits, single phase and three-phase system etc. Problems on A.C. circuits. Power consumption in series and parallel, P.F. etc. Concept three-phase Star and Delta connection. Line and phase voltage, current and power in a 3 phase circuits with balanced and unbalanced load.

**Earthing** - Principle of different methods of earthing. i.e. Pipe, Plate, etc  
Importance of Earthing. Improving of earth resistance Earth Leakage circuit breaker (ELCB).  
In absence of latest revision in respective BIS provision for Earthing it is recommended to follow IEC guidelines.

**Electric wirings**, I.E. rules. Types of wirings both domestic and industrial. Specifications for wiring. Grading of cables and current ratings. Principle of laying out in domestic wiring.

Voltage drop concept.

**Wiring system** - P.V.C., concealed system. Maintenance and Repairing data sheet preparation. Specifications, standards for conduits and accessories

- Power Wiring
  - Control Wiring
  - Information Communication
  - Entertainment Wiring.
- Testing of wiring installation by meggar.

Study of Fuses, Relays, Miniature circuit breakers (MCB), ELCB, etc.

### **Under Ground Cable :**

Construction of cables. Material for cables, its insulation. Classification of cables, cables for 3-phase service, Laying of underground cable. Types of cable faults and their location.

Schedule of electrical preventive maintenance. Break down, Routine & Preventive maintenance of DC/AC machines, Voltage stabilizer, U.P.S. & Equipments.

## **Syllabus for Technician (1)( Tractor Driver) Post Code :T0216**

Occupational Safety & Health Importance of Safety and general Precautions to be observed in the shop. Basic first aid, safety signs - for Danger, Warning, caution & personal safety message. Safe handling of Fuel Spillage, Fire extinguishers used for different types of fire. Safe disposal of toxic dust, safe handling and Periodic testing of lifting equipment, Authorization of Moving & road testing vehicles. Energy conservation-Definition, Energy Conservation Opportunities (ECOs)-Minor ECos and Medium ECos, Major ECos), Safety disposal of Used engine oil, Electrical safety tips.

Auto Industry - History, leading manufacturers, development in automobile industry, trends, new product. Brief about Ministry of Road transport & Highways, The Automotive Research Association of India (ARAI), National Automotive Testing and R&D Infrastructure Project (NATRIP), & Automobile Association. Definition: - Classification of vehicles on the basis of load as per central motor vehicle rule, wheels, final drive, and fuel used, axles, position of engine and steering transmission, body and load. Brief description and uses of Vehicle hoists – Two post and four post hoist, Engine hoists, Jacks, Stands.

Tractor Industry in India - leading manufacturers, development in Tractor industry, trends, new product. Study of tractors, dozers & their major assemblies, and different make (indigenous). Constructional differences between tractor and dozers and their merits. Different type of Tractor starting method and stopping.

Engine Basics: Classification of engines, Principle & working of 2&4-stroke diesel engine (Compression ignition Engine (C.I) ), Principle of Spark Ignition Engine(SI), differentiate between 2-stroke and 4 stroke, C.I engine and S.I Engine, Direct injection and Indirect injection,. Brief on common rail diesel injection engine. Engine output, compression pressure, Compression ratio.

Cooling systems:- Purpose, types, Heat transfer method, effect of boiling point & pressure, coolant properties, preparation and recommended change of interval, use of antifreezer. Cooling system components, water pump, function of thermostat, pressure cap, Recovery system & Thermo-switch. Function & types of Radiator.

Lubrication system: - purposes & characteristics of oil, type of lubricants, grade as per SAE, & their application, oil additives, type of lubrication system. Lubrication system components- different type of Oil pump, Oil filters & oil cooler. Probable reasons for low / high oil pressure, high oil consumption and their remedies.

Carburetor operation-Carburation, Carburetor system components, Carburetor systems, Metering jets, Accelerating, Carburetor barrels Diesel Fuel Systems Diesel fuel characteristics, concept of Quiet diesel technology & Clean diesel technology, Fuel feed system used in Tractor's description and layout. Diesel fuel system components, Description and function of Diesel fuel injection system, types of fuel injection pumps, type of drive, injectors-types and function. Governor and their types. Distributor-type injection pump, Glow plugs, Cummins & Detroit Diesel injection Diesel electronic control- Diesel electronic control systems (DEC), Common rail diesel injection system. Method of bleeding fuel supply system.

Clutch:-types, construction and function. Components of clutch -driver & driven plates, torsion spring, cushion springs, operating fingers, clutch shaft, Slave cylinder & oil seal. Clutch release bearing & linkages. Manual transmissions Function, description, types and their application. Gearbox layout. Components of tractor gear box. Principle of epicyclical gear box. Necessity of torque convertor, need of 4 x 4 wheel drive / Front wheel drive, Low & high gear ratio, universal joint and propeller shaft.

Final Drive & Drive Shafts Differential carriers double reduction gearing, differential lock, crown wheel and pinion adjustments, function and types of power take off (PTO) mechanism. Types of front & rear axles. Common trouble and their remedies, care and maintenance.

Steering & Suspension Systems Function and types of steering system. Description, construction and function of mechanical steering system steering wheel, steering gear box, tie-rod, arms link, ball and socket joints etc. their movement and adjustment. Description and mechanism of foot steering pedal as incorporated in tractors. Description, working and principle of hydraulic steering system. Different parts such as pump, distributor valves, pipe line and hoses etc Development of mechanical framing. Use of Power tiller, Tractor & Bulldozer, Chassis frame of tractor.

Wheels & Tyres- Description, construction and function of Wheel. Rim sizes. Types & sizes of tyres. Solid, pneumatic & Radial. Ply rating. Tyre materials, Hysteresis & designations, Tyre information, Tyre tread designs, Tyre ratings for temperature & traction. Importance of in-Flatting tyres to correct pressure. Repair and maintenance of tyres and tubes. Storage of tyres. Descriptions Tirewear Patterns and causes Nitrogen vs atmospheric air in tyres.

Braking Systems - Braking fundamentals Principles of braking, Drum & disc brakes, Lever/mechanical advantage, Hydraulic pressure & force, Brake fade. Braking systems - Brake type used on tractor - principles, Air brakes, Braking system components-Park brake system, Brake pedal, Brake lines, Brake fluid, Bleeding, Master cylinder, Divided systems, Tandem master cylinder, Power booster or brake unit, Hydraulic brake booster, Applying brakes, Brake force, Brake light switch Drum brakes & components -Drum brake system, Drum brake operation, Brake linings & shoes, Backing plate, Wheel cylinders Disc brakes & components -Disc brake system, Disc brake operation, Disc brake rotors, Disc brake pads, Disc brake calipers, Proportioning valves, Proportioning valve operation, Brake friction materials. Description, working principle & use of power tiller (two wheel tractor) power unit. Method of power transmission to wheel from engine. Main clutch assembling working procedure steering Clutch/brakes mechanism method of power transmission to implement (Rotation), irrigation pump, thresher. Hitching of M.B. Plough, trailer disc harrow.

Tractor equipment:- Description, function of harrows, cultivators, seed drills & tractor trailer. Hitching of equipment. Danger in overloading & incorrect field operation. Average life of Agriculture implements. Description and function of tractor accessories such as Draw bar, top link & Belly Pulley. Setting of draw bar to correct height. Use of Hydraulic lift. Maintenance of tractor accessories.

Tractor Electrical Maintenance: Lighting arrangement in tractors (As applicable). Description of charging circuit. Operation of alternator, regulator unit ignition warning lamp troubles and remedy in charging system. Fault finding in electrical system. Description of starter motor circuit, common troubles and remedy in starter circuit. Description of lighting circuit. Charging & discharging of lead acid battery.

## Syllabus for Technician (1)(Carpenter) Post Code :T0316

Role of Carpenter , Description of trade. Different types of tools and equipments used in Carpentry. Safety precautions: i) While using different hand tools. ii) While using raw materials. iii) With co-workers.

Knowledge of measurement and its conversion to other system.

Identification of timber as per quality and classification, care and safe uses of tools. Understanding tolerances & house keeping. Identification of plywood as per quality, use and classification, care and safe uses of tools. Understanding tolerances. Storage & maintenance of plywood. Identification, care and safe uses of timber jointing tools, knowledge of various joints and appropriate applications, their relative merits and demerits.

Safety precautions, use of protective clothing and elementary first aid. Functions and uses of various tools tools and equipment. Reasons for carrying out good housekeeping practices. Care and use of tool, equipment and materials used in fitting.

Selection and correct use of tools , Criteria for selection of tool for different operations. Proper handling and correct use of hand tools. Types of measuring tools. Least count and errors. Measurements procedures. Safety precautions related to measuring tools. Introduction of marking tools. Application of marking tools. Safety, proper handling and use of marking tools. . Introduction to sheet metal hand tools and machine tools and safety precautions to be observed while using them. Types of sheet metal and their Applications. Different sizes of Sheet metal commercially available.

Metal joining method. Types of seams and allowances. Types of rivets and their applications. Types of rivet joints. Defects of riveted joint. Safety precautions. Knowledge of limits, fits, tolerance , Systematic steps of different operations. Safety consideration in each operation.

Basic principle of repairing work and repairing technique of furniture, door, window, rack etc.  
Economical factors and material estimate **Introduction to timber** : growth of a trees, cross-section of an exogenous tree trunk, parts, formation. Parts of a tree.  
Functions and identification of timber and defects , diseases of timber VIZ. Knots , shakes, grains etc Broadening joints - description, types, and uses. Adhesives - types, uses etc.