

Syllabus for the post of JE (P.Way)20% LDCE quota in Engg.Department/DNR

Paper-I

Annexure-B1

General knowledge, Basic engineering & other railway relevant topics.

1. General ability and computer knowledge.

This paper contains question based as to test the knowledge of candidates, which they would acquire by general observation/reading without a specific study or detailed knowledge of test books. The paper should also contain questions on topic of national importance, achievements of Railway as also questions which will test the awareness of candidates to developments which are taking place. Some questions will be on basic of computer knowledge.

2. Soil Mechanics.

Elements of soil mechanics, physical properties of soil, compaction, field methods of compaction stabilization of soils, specifications and construction of earth work in embankment and cuttings, Side and catch water drains.

3. Surveying

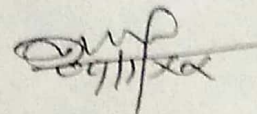
- i) **Chain and Compass Survey:-** basic principles, base lines, check lines, tick lines, perpendicular and oblique offsets, conventional signs, plotting of survey, true and magnetic bearings, open and closed traverses, recording plotting of traverse, closing errors.
- ii) **Plane Table Survey:-** plane table outfit, methods of radiation, intersection and traversing, contouring with plane table using telescopic alidade merits and demerits. Leveling- Level Lines- Datum, bench marks , simple leveling, fly leveling, recording the levels in field book method reducing levels, arithmetical check, Longitudinal and cross section contouring.
- iii) **Theodolite Survey:-** Types of theodolites, measurement of horizontal angles, vertical angles, magnetic bearings and deflection angles prolonging straight line, traversing by method of included angles, balancing the survey closing errors, calculations of latitude and departure, use of theodolite as a tachometer.
- iv) **Curves :-** Elements of Simple circular curves, setting out simple circular curves, different methods.

4. Establishment & finance matters pertaining to P. Way staff: Conduct rules, Discipline & Appeal rules, pass and leave rules, Factories act, Payment of wages act, Workmen compensation act, Hours of works and period of rest, retirement benefits etc.

5. Stores matters in P.Way

DMTR, Field book, MAC account, P.way stores transactions, accountal and verification, classification of P.way materials and disposal of scrap.

6. Official language policy and rules.



**Paper-II
(P.Way Engineering)**

Annexure-B1

1. Duties of P.Way staff.

Duties of Asst. Engineers, duties SSE/P.way, JE/P.way. Track maintainer I to IV patrolmen and Gate keeper.

2. P.way component including track renewals

Rails, Sleepers, welds, Fastenings, Points & Crossings Formation, Functions, maintenance and track renewals,

3. Inspection and monitoring of Track.

Inspection schedules, OMS, TRC, TGI, Track monitoring and TMS

4. Construction and maintenance of P.Way

Laying of new tracks, systems of maintenance :- Over-hauling, systematic through packing, picking up slacks, miscellaneous works, lifting and lowering of track screening of ballast, maintenance of drains, lubrication of rail joints, adjustment of creep, maintenance of level crossing, maintenance of point and crossings special maintenance Works.

Maintenance of curved track and realignment of curve, curvature transitions, super elevation of curves, safe speeds cant deficiency, speed on curves with turnouts, realignment of curves, methods.

5. Laying and maintenance of LWR track.

Maintenance of short welded rails, long welded rails and continuous welded rails, maintenance in electrification section, special precaution, maintenance of track circuited sections, special precautions.

6. Mechanized maintenance of track including small track machines.

Need for mechanization, model of mechanized maintenance, Small track machines: types, use in maintenance, spot attention with off track tampers, Troubleshooting and system of repairs & maintenance, pre-requisites to tamping and other machine works Pre & Post and during attentions for tamping and machine working, Design mode of tamping: survey and procedure of tamping.

7. Working of Trolleys, Lorries, Materials trains and protection.

Engineering restrictions and indicators, works of short duration, work of long duration, Temporary engineering fixed signals, Equipment on trolleys and lorries working of trolleys and lorries, Ballast and material trains, General rules for working.

8. Level Crossing-

Maintenance of level crossing, examination of gate equipment and gateman in rules.
Track structure in level crossing.

9. Patrolling of the railway line-

Patrol books and systematic patrolling, duties of patrolmen.
