

(Through BSNL Intranet Portal)

**BHARAT SANCHAR NIGAM LIMITED**  
( A GOVT OF INDIA ENTERPRISE)  
**CORPORATE OFFICE : BW UNIT**  
10<sup>TH</sup> FLOOR, CHANDRALOK BLDG, NEW DELHI

No. LDCE/AD(BW-II)/05/Pt

Dated : 12.01.2011.

To

1.All Chief General Manager,  
Telecom Circles, BSNL.

2.All PCE(Civil)/ CE(Civil)/ GM(USO) Project/ GM (BS-C) ALTTTC/ GM(Ex  
Project), BSNL Civil Zones.

**Sub.: Limited Departmental Competitive Examination (LDCE) for promotion to  
the grade of Sub Divisional Engineer(Civil) under 33 % quota : Regarding  
Scheme & Syllabus.**

Kindly find enclosed herewith the scheme and syllabus for the Limited  
Departmental Competitive Examination (LDCE) for promotion to the grade of Sub  
Divisional Engineer(Civil) under 33 % quota. It is requested to give the same a wide  
circulation among the desirous candidates.

This issued with the approval of the competent authority.

Encl.: As above.

  
(S C Garg) 12/1/11  
DGM(BW-I)

Copy to :

- 1.PGM(BW) BSNL CO New Delhi.
- 2.GM(Rectt) BSNL CO New Delhi.
- 3.DGM(BW-I)/ (BW-II)/ (Civil) BSNL CO, New Delhi.
- 4.All recognized unions/ associations.
- 5.Guard file.

**Limited Departmental Competitive Examination (LDCE) for promotion to the grade of Sub Divisional Engineer(Civil) under 33 % quota : Regarding Scheme & Syllabus.**

**Scheme**

1.

Paper	Subject	Pattern of Exam	Maximum Marks	Duration of paper
I	Civil Engineering	OMR evaluation basis	100	3 Hours
II	Civil Engineering	OMR evaluation basis	100	3 Hours

2.The minimum pass marks prescribed for each paper is 50 % in respect of 'OC' candidates and 45 % in respect of SC/ST candidates.

3. Negative marking may be adopted in both the papers and for each wrong answer, 25 % of the marks of that question will be deducted.

4.Each question will have four choices for the answer and only ONE of them which is the most appropriate answer shall be darkened. In other words, darken only one bubble, which is considered to be the correct answer from among the four choices given.

5.In case the candidates has not darkened any bubble for a question, he may be awarded zero (0) marks for that question.

6.The number of questions for each paper shall be 100 ( One hundred).

7.Each question will be of one marks.

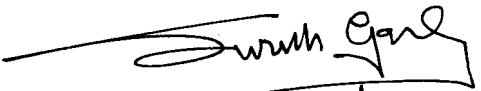
8.The question papers will be so designed as to assess the ability of the candidates to apply their technical knowledge to the solution of the problems.

9.The number of questions from each topic shall total up to the marks as prescribed for the topic concerned in the syllabus of the examination, however, there may be slight variation /adjustment in the same.

10.No marks for evaluation of record of service (i.e. ACR) shall be done.

11.Candidates are not permitted to take any book e.g. steel table, log book etc to the examination hall. However, the examiner will provide the necessary data as deemed fit/ necessary for solving the questions, in the paper itself.

12.Candidates are not permitted to use pocket calculators/ scientific calculators etc.

  
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**Syllabus for Limited Departmental Competitive Examination (LDCE) for  
promotion to the grade of Sub Divisional Engineer(Civil)**

**PAPER I (Multiple choice)**

**CIVIL ENGINEERING**

**(Maximum Marks – 100, Time – 3 Hours)**

1. General : ( 8 Marks)  
BSNL Mission and Vision, Role of Civil Wing in BSNL, BSNL CDA Rules, RTI Act 2005.
2. Strength of Materials and Theory of Structures (17 Marks)
  - i) Stress-strain relations-Hooke's Law
  - ii) Determination of forces in members of trusses, pin-joint frames,
  - iii) Bending moments and shear forces. Theory of simple bending.
  - iv) Continuous beam and simple portals- Determination of bending moments and shear forces- methods of analysis.
3. Design Principles ( 10 Marks)
  - i) Determination of dead, live, wind load and earthquake forces. Factor of safety and load factor. Use of relevant BIS Codes.
4. Steel Design (15 Marks)
  - i) Design of simple beams and plate girders according to Indian Standards.
  - ii) Design of single and built up columns, column base connections.
  - iii) Design of steel roof trusses.
5. Reinforced Concrete (25 Marks)
  - i) Basic principles of reinforced concrete, shear, bond and diagonal tension, location of reinforcement.
  - ii) Design of single and doubly reinforced beams, one way and two way slabs.
  - iii) Theory and design of reinforced concrete columns with uni- directional bending only.
  - iv) Design of cantilever and simple counterfort retaining walls.
  - v) Liquid retaining structures- special requirements.
6. Construction Practice (25 Marks)
  - i) General details of building construction including foundations, flooring, masonry and different types of roofs, safety during constructions.
  - ii) General properties, standard requirement and tests for common building materials such as bricks, stones, sand, aggregate, cement, lime, timber and steel. Tests for fresh and hardened concrete, non- destructive tests. Workability of concrete, water cement ratio, ingredients including admixtures, mix design methods.
  - iii) CPWD specifications for building works, sanitary and water supply works and road works including modes of measurements.
  - iv) Bar charts, CPM & PERT Techniques.

  
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**Syllabus for Limited Departmental Competitive Examination (LDCE) for  
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**PAPER II (Multiple choice)**

**CIVIL ENGINEERING**

**(Maximum Marks – 100, Time – 3 Hours)**

**1. Surveying**

**(25 Marks)**

- i) Use and adjustment of surveying instruments : Chain, Plane table and accessories, Magnetic compass, level and theodolite.
- ii) Compass and theodolite, Traverses, Errors and precision in traversing. Traversing computations and adjustments.
- iii) Plane table surveying :Plotting of details, three point problem and two point problem.
- iv) Levelling :Methods of leveling and reduced level calculations.
- v) Contouring : Features and Uses.
- vi) Curves and alignment : Setting out of simple, reverse and transition curves using different methods, vertical curves.

**2. Highway Engineering**

**(25 Marks)**

- i) Road alignment in hills and plains, minimum standards for national highways.
- ii) Principles of designs of urban roads their cross section, requirement and intersections, road drainage and maintenance, House paths, approach roads and service lanes.

**3. Public Health Engineering**


**(25 Marks)**

- i) Water supply : Quality and quantity of water required for public water supplies. Water purification processes.
- ii) Water distribution system- valves and fittings etc.
- iii) Sanitation : Orientation, Ventilation and damp proofing buildings. Sanitary appliances, construction and testing of house drains.
- iv) Sewage disposal, Sewerage system- Construction and maintenance. Types of sewage treatment- Oxidation ponds, simple sedimentation, recirculation and high rate filtration, contact beds, percolating filters, septic tanks, imhoff tanks.

**4. Soil mechanics and foundation engineering**

**(25 Marks)**

- i) Index properties of soil, classification, soil explorations
- ii) Foundation engineering:Principles of selection of types of foundation for a structure, shallow and deep foundations, methods of determining bearing capacity.
- iii) Compaction : Laboratory and field method, optimum moisture content, settlement/ consolidation.
- iv) Foundation on expansive soils, types of piles: their design and layout.

  
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