Domain Syllabus for Manager (Design) Vacancy Notice No. 06/2020

<u>Domain Knowledge (Civil Engineering)</u> ≈ 70%

- 1. Building Materials, Testing & Evaluation
- 2. Surveying
- 3. Soil Mechanics
- 4. Theory of Structures /Structural Engineering
- 5. Railway Engineering
- 6. Civil Structure Design RC/ PSC/ Steel for Railway / Road Bridges and Building
- 7. Basics for Estimation and Costing.

General Awareness, English, Reasoning ≈ 30%

Domain Syllabus for AGM/JGM/DGM (Design) Vacancy Notice No. 10/2020

Domain Knowledge (Civil Engineering) ≈ 70%

- 1. Surveying
- 2. Estimating, Costing and Valuation
- 3. Soil Mechanics and Geotechnical Investigations
- 4. Building Materials, Testing & Evaluation
- 5. Theory of Structures / Structural Engineering
- 6. Railway Engineering
- 7. Construction Engineering, Structure/Foundation Load Testing and underground Structures
- 8. Civil Structure Design RC/ PSC/ Steel for Railway / Road Bridges and Building, Underground structures Stations, Tunnel Segments (RCC/ Steel), Tunnel Support System (NATM), Framed structures
- 9. Basics of Contract Management FIDIC etc.

General Awareness, English, Reasoning ≈ 30%

<u>Domain Syllabus for Dy. CPM – Civil, Bridge, Building Work, Contract Vacancy Notice No. 11/2020</u>

<u>Domain Knowledge</u> \approx 70%

1. Surveying: -

Tachometric surveying, Remote Sensing, GPS and GIS, Latest Surveying instruments and methods, Practical field applications in curve setting, alignment fixing etc.

2. Construction technology: -

Guidelines for mix design High Performance concretes. Construction Equipment, Construction Quality inspection and testing, Quality control, Quality Assurances, Quality Certification, Safety in Constructions.

3. Soil mechanics: -

Sub Soil Investigation - Method of Exploration, Geo physical and conventional Methods, Analysis of test reports, correlation with design.

4. Land acquisition: -

Various Land Acts, Notification, Procedure, Organisation, Methods of Calculation etc.

5. Bridge engineering: -

Site Investigations, Bridge hydrology, Geometry of Bridges, Steel, RCC, Pre stressed Road and Rail Bridges, prestressing systems and methods, Bearings Joint, Foundation, Construction and Erection, Codes of Practice.

6. Project management: -

Basic forms of organisation, Project feasibility Repots, Role of Project Management consultant.

7. Project scheduling – construction: -

Scheduling, Software in Constructions scheduling (MSP, Primavera, Construction Manager)

8. Elevated structures: -

Precast construct ions, Casting Yards, Launching Schemes.

9. <u>Track: -</u>

Basic Track Structure, Turnouts and crossing, curved track, Track alignment.

10. Contracts: -

Tendering process, Administration/Performance of contract Responsibilities (Duties and Liabilities) of Principal & Contractor, Monitoring and Quality control/assurance, Settlement of claims – Advances, Bills, Extension for time, Extras & Variations, Cost Escalations. Security Deposit, Retention Money, Performance Bond, Liquidated Damages, Penalties, Statutory Requirements. Breach of contract, Dispute resolution, FIDIC conditions of contracts.