

# **SYLLABUS FOR THE FOLLOWING POSTS**

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**Assistant Engineer (Civil) (B-17) in the Local Government & Rural Development Department.**

**Assistant Engineer (Civil) (B-17) in the Local Council's Service Wing, Local Government & Rural Development Department.**

**Sub Divisional Officer/A.D. (Civil) (B-17) in the Communication & Works Department.**

### **SYLLABUS:**

- 1. Building Materials and Constructions**  
Engineering Materials, Building Construction, Functional Planning of building
- 2. Design of Structures**  
Design of RC Structures, Design of Steel Structures
- 3. Engineering Mechanics**  
Static, Dynamic, Kinetics
- 4. Strength of Materials**  
Simple Stress and strain, Shear force and bending moment, Deflection of beams, Theories of column and struts, Thin and thick cylinders
- 5. Structural Analysis**  
Analysis of determinate structures, Analysis of indeterminate skeletal frames, Plastic analysis of indeterminate beams and simple frames, Moving loads-shearing force and bending moment diagrams
- 6. Fluid Mechanics and Hydraulic Engineering**  
Dynamics of fluid flow, Viscous flow, Incompressible flow through pipes, Compressible flow, Open channel flow
- 7. Water Resources Engineering:**  
Hydrology, Ground water flow, Planning of water resources
- 8. Sanitation and Water Supply (Environmental Engineering):**  
Sanitation, Disposal of sanitary sewage, Sewer treatment, Environmental pollution and ecology, Water Supply, Intake of water, Water storage and distribution
- 9. Hydraulic Machines and Hydropower**  
Hydraulic pumps, Reciprocating pumps, Hydraulic turbines, Principles of hydropower development
- 10. Irrigation Engineering**  
Water requirement for crops, Distribution system for canal irrigation, Design of canals, Canal structures, Water logging, Diversion headwork's, Storage works, Spillways, River training
- 11. Surveying, Estimation & Costing**  
Surveying, Estimating and costing
- 12. Transportation Engineering**  
Airports, Harbors, Railways, Roads, Traffic engineering, tunneling
- 13. Construction Planning & Management**  
Earthwork equipment's, Concreting equipment's, Planning & Management, Network Analysis
- 14. Design of Masonry Structures**  
Material, Types of structures, Types of stone masonry

### **Suggested Readings:**

1. *Edward Allen, Joseph Iano; Fundamental of Building Construction Materials and Methods; John Wiley & Sons. NY 2004.*
2. *Blyth, F. G. H. Geology for Engineers, Butterworth-Heinemann, 7th Edition, 1984*
3. *Hibbeler, R. C. Engineering Mechanics- Statics and Dynamics, Prentice Hall. (10th Edition), 2003*
4. *Hibbler, R. C., Mechanics of Materials, Prentice Hall, 6th Edition, 2004.*
5. *S. Dutta, Estimating and Costing in Civil Engineering, 24th Ed. SOS Free Stock, 1999*
6. *H. H. West, Fundamentals of Structural Analysis, John Willey-New York, 2<sup>nd</sup> Edition, 2002*
7. *Arthur H Nilson, David Darwin, Charles W. Dolan, Arthur Nilson, Charles Dolan, Design of Concrete Structures. 2003, McGraw-Hill*
8. *Building Construction: Principles, Materials, and Systems 2009 Update. Medan Mehta, Walter Scarborough and Diane Armpriest.*
9. *R. C. Hibbeler, Mechanics of Materials, Prentice Hall; 8th edition (April 1, 2010)*