

H.P. Board of Departmental Examination
Departmental Examination of Engineering Officers of HPSEB Ltd
 Session *May*, 2021 (Paper-B)

Time Allowed: 3 (Three Hours)

Maximum Marks: 200

Part-1: Consumer/Company Accounts and Accounting Procedures (100 Marks) (open books, Bare Acts/Rules & manuals)

Attempt any 4 questions

- Q.1 Write a note on any five of the following. (5x5 marks)
 I Cost estimate II Administrative Approval III Technical Sanction
 IV Escalation V Role of Vigilance in implementation of projects
 VI Funding of projects covering budgetary provisions & Externally Aided projects VII Capex. & Opex.
- Q.2 Write a note on any five of the following. (5x5 marks)
 I Asset II Liability III Balance Sheet IV Cash Book V Double Entry
 System of Accounting VI Suspense Accounts VII Depreciation
- Q.3 Write a note on any five of the following (5x5 marks)
 I Purchasing through GeM Portal II Special Purpose Vehicle
 III Payment Gateway IV Deviation in quantities & Sanction thereof
 V Manual & Computerized accounting system VII PPP Projects
- Q.4 a) What is the procedure of physical verification of Stores and who is competent for physical verification of each type of Stores ? (9 marks)
 b) What is Stock Measurement Book? Explain the use & upkeep of Stock Measurement Book. (8 marks)
 c) What is the procedure followed in dealing with the cases related to the disposal of unserviceable, obsolete and surplus stores? (8 marks)
- Q.5 a) Explain in detail the complete procedure for calling & evaluation of Tenders? (10 marks)
 b) What is the procedure of Arbitration and Legal proceedings in handling the Contracts in HPSEB Ltd? (8 marks)
 c) What is Time & Cost overrun in construction projects. (7 marks)

Part-2: Civil and Mechanical Engineering (100marks)(open books & manuals)

Attempt any 4 questions

- Q.1a) Draw in free hand a Typical Layout of Run of River HE Project. (10marks)
- b) What is the main data required for hydraulic design of Barrage or weir on Permeable foundation. Explain each in brief. (15marks)
- Q.2 a) Importance of detailed Geological Investigations for Tunnel Projects & It's impact on cost and schedule related to project construction. (15marks)
- b) Explain DRESS methodology to negotiate the Shear Zone in Head Race Tunnel. (10marks)
- Q.3 a) What are the important components of Hydropower Project? Also describe in brief the functions of these components. (13marks)
- a) Why Surge Shaft is required in Hydropower Project. What are the operating conditions for hydraulic design of Surge Shafts. What value of Manning's "N" be used to calculate the extreme transients in upstream surge shaft? (12marks)
- Q.4 Explain any five of the following. (5x5marks)
- I Water Hammer II Differential Head III Instrumentation to study rock mass behavior of underground caverns IV Fish Ladder V Design Flood VI Undersluices
- Q.5 What is the basic difference between the followings. (5x5marks)
- I Dam & Barrage II Stop Log & Gate III Expansion Joint & Coupling IV Manhole & Grout Plug in Penstock V Pumps & Turbines
- Q.6 a) What are the different types of Gates used in Hydro Electric Projects? (12marks)
- b) Mention essential features & Structural Components of Fixed wheel gate. (13marks)
- Q.7 Define the following terms used in Hydro Electric Projects. (25marks)
- a) Gross Head b) Net Head c) Maximum Head d) Minimum Head e) Rated Head f) Velocity Head g) Pressure Head