

HP BOARD OF DEPARTMENTAL EXAMINATION  
FOR ENGINEERS OF HPSEB.

OCT; 2011

PAPER-1 ~~OCT 2011~~ WORKS, ACCOUNTS & STORE/MANUAL

ATTEMPT ANY FIVE QUESTIONS, MINIMUM TWO FROM PART-I AND  
MINIMUM TWO FROM PART-II OR PART-III.

NOTE-I: PART-I IS COMPULSORY FOR ALL ENGINEERING OFFICERS.

PART-II IS MEANT FOR CIVIL/MECHANICAL ENGINEERS OFFICERS

PART-III IS MEANT FOR ELECTRICAL OFFICERS.

NOTE-II: PAPER IS WITHOUT REFERING ANY BOOKS.

TIME: 3 HOURS

MAX. MARKS: 300

**PART-I WORKS, ACCOUNTS & STORES/MANNUAL**

Q. I) Explain the following:

- |     |                                     |    |
|-----|-------------------------------------|----|
| (a) | Annual Budget estimate              | 15 |
| (b) | Administrative Approval             | 15 |
| (c) | Technical Sanction                  | 15 |
| (d) | Audit inspection & Audit objections | 15 |

- |        |     |  |    |
|--------|-----|--|----|
| Q. II) | (a) | Explain record of measurements and making payments to contractor                             | 20 |
|        | (b) | What are the reasons for blacklisting any firm and what is the procedure for doing the same? | 20 |
|        | (c) | What are the guidelines for destruction of official record?                                  | 20 |

Q. III) For Maintaince of Stores Accounts, explain:

- |     |                               |    |
|-----|-------------------------------|----|
| (a) | Stock Card                    | 20 |
| (b) | Stores Value Ledger           | 20 |
| (c) | Issue rates of Stock articles | 20 |

Q.IV) Explain, Complete Procedure for Calling, Evaluation, Award  
and Contract signing of Tenders 60

**PART-II FOR ENGINEERING OFFICERS (CIVIL/MECH)**

Q. I) In a Hydroelectric Project Comprising Barrage, Intake, Desilting Chambers, Head Race Tunnel, Surge Shaft, Pressure Shaft, Francis Turbine & Tail Race Tunnel, Explain the following:

- |     |   |    |
|-----|---|----|
| (a) | Formula for calculation of Power in Megawatts       | 10 |
| (b) | Head Losses in the above system, explain in detail. | 20 |

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	(c)	Explain sequence of operations for construction of tunnels	20
	(d)	Survey & Investigations required for underground structures.	10
Q. II)	(a)	What are the main guidelines for selecting a satisfactory site for locating a barrage?	15
	(b)	Explain Design flood, Afflux and Cut off in a diversion structure	15
	(c)	Explain in detail, design of a diversion structure	30
Q. III)		Give Procedure for preparation of DPR of a Hydroelectric Project.	60
Q. IV)	(a)	Write a detailed note on identified hydel potential of H.P, Its development in State, Central & through IPP's	40
	(b)	Role of HPSEB Limited, HPPCL & HPTCL in harnessing and Providing cheap electricity to the consumers.	20
<b>PART-III FOR ENGINEERING OFFICERS (ELECTRICAL)</b>			
Q. I)	(a)	What is the procedure to be adopted while issuing the monthly bills in cases where separate meter has been provided for segregating the large & small loads at an industrial premise?	30
	(b)	How theft of electricity can be minimized?	15
	(c)	Give suggestions to reduce losses in an Electricity Utility.	15
Q. II)	(a)	What is open access?	15
	(b)	Explain the roles of Power Grid & State Transmission Corporations.	15
	(c)	Explain Power Trading.	30
Q. III)	(a)	What are the main duties of distribution utility?	20
	(b)	What are the required clearances where a HT Line passes above a residential building?	20
	(c)	Explain Reporting/Intimation of Electrical Accidents.	20
Q. IV)	(a)	How the Tariff of electricity is determined in a hydroelectric system?	20
	(b)	What factors governs to fix the width of underground caverns in a Hydroelectric Project?	20
	(C)	What are the main head losses to be considered in a Hydroelectric Project?	20