

**Question no 1. (a)**

In case Damaged Power Transformer is replaced by a repaired old transformer first part of the estimate will be prepared as under:-

A.	Cost of repaired old transformer	14.541/542	25,00,000
	(Original book value)		
	Erection charges	14.541/542	8,000
	Total		25,08,000
B.	Cost of damaged transformer	10.541/542	17,00,000
	Less: accumulated depreciation	12.541/542	8,50,000
	Net depreciated cost		8,50,000
C.	Labour of dismantlement	75.133/334	
		75.333/334	
		75.433/334	4,000
	<b>Net estimated cost</b>	<b>(A+B-C)</b>	<b>16,62,000</b>

**(b)**

**Monthly abstract of Meters**

Particulars	Repaired	New
Opening Balance	250	150
Received during the month	410	330
Issued during the month	500	400
Closing balance	160	80

**Question no. 2 (a)**

(i) An entry once made in the Cash Book should in no circumstances be erased. If a mistake has been made and it is discovered before the Cash Book has been submitted to the divisional office, the mistake should be corrected by drawing the pen through the incorrect entry by inserting the correct one in red ink between the lines. The disbursing officer should initial every such correction and invariably date his initials. When the mistake is discovered too late for correction in this way an intimation of the necessary correction should be sent at once to the divisional office accompanied by a proposed journal entry, if necessary. Except as indicated above, no correction of an entry, once made in his Cash Book should be made by a Sub Divisional Officer unless authorized by the divisional office to do so. The same principles would be observed in correcting errors noticed in the divisional Cash Book.

(ii) If the accounts of the month have been closed, no corrections of errors in amount, classification or name of work should be made in that book, but a journal entry should be prepared for the necessary corrections, a suitable remark in red ink (quoting reference to the correction in accounts) being recorded against the original erroneous entry in the Cash Book.

**Q. no. 2 (b)** The Chief Engineer or the Superintending Engineer whosoever is competent to sanction the estimate for the work proposed to be taken in hand anticipation of a sanctioned estimate or provision of funds is the authority to decide as to whether the urgency of any case warrants the commencement of work. No work whatsoever should be commenced in the absence of a sanctioned estimate, without the previous approval in writing of Chief Engineer/Superintending Engineer, which will be accorded only in cases of real urgency. Even if such an approval has been accorded, the expenditure incurred is in no way regularized, until an estimate is sanctioned by competent authority. The Divisional officer concerned should, therefore, take immediate steps to have estimate (final or tentative) sanctioned for such works. In the case of estimates sanctioned by the Divisional officer, advice should be submitted to the CE and CAO, through the Superintending Engineer of the particulars of sanctioned estimates.

**Question no. 3**

The Measurement Book is a most important record being the basis of all accounts of quantities, whether a work done by daily labour or by the piece, or by contract or of materials received which have to be counted or measured. The description of the work must be lucid, so as to admit of easy identification and check and should contain such a complete and reliable record of facts as to be conclusive evidence in a court of law. The entries should be recorded by mentioning the PO/WO not and date name of supplier/contractor, estimate no, date of commencement of work/ supply, date of completion of work/ supply etc.

- i) The pages of the book should be machine-numbered and no page should, on any account be torn out of a book, nor should any entry be erased or disfigured so as to be illegible. If a mistake be made, it should be corrected by cancelling the incorrect words or figures with a single stroke of the pen or pencil and by writing the correct words or figures separately; and the corrections thus made should be initialed and dated by the responsible officer.
- ii) All measurements must be neatly recorded in the authorized form of Measurement Book. The entries should be made, if possible, in ink but when this is not possible and entries have to be made in pencil, the pencil entries should not be inked over
- iii) As all payments for work or supplies are based on the quantities recorded in the Measurement Book, it is incumbent upon the person taking the measurements to record the quantities clearly and accurately.
- iv) Entries should be recorded continuously in the Measurement Book and no blank pages should be left. Any pages left blank inadvertently must be cancelled by diagonal lines, the cancellation being attested and dated.
- v) The Measurement Book being primarily the initial record made on the spot by personal measurement by a responsible Executive Officer or subordinate of quantities or work done or materials received and only secondarily and incidentally a record of expenditure incurred on the basis of quantities it is obvious that in a case where the service to be paid for is not susceptible of Measurement, such as octroi duty, municipal taxes, electric charges and railway freight, etc. or where it is not possible to determine the quantity of work done, entries need not be made in Measurement Books.
- vi) Further petty purchases up to Rs. 50/- in each case made from the local bazaar, for which payments have to be made immediately.
- vii) Similarly payments for washing clothes belong to a rest house or dispensary have to be made immediately. In such cases it is not possible to observe the usual formality of recording measurements in Measurement Book and their scrutiny and approval by the Sub Divisional Officer before making payments, and consequently no entry in Measurement Book need be made.
- viii) Detailed measurements may be dispensed with in cases in which payments on account of work actually executed are made on the certificate of a responsible officer not below the rank of Sub Divisional Officer to the effect that not less than the quantity of the work paid for has actually been done. Final payment may, however, in no case be made without detailed measurements.

- ix) When any measurements or series of measurements are cancelled, the cancellation must be supported by dated initials of the officer ordering the cancellation.
- x) The index provided at the commencement of each book should be carefully kept up to date and the inner title page in the Measurement Book showing the number of the book, name of officer etc., must invariably be filled in, as well as the entries on the outside table.
- xi) The sub divisional clerk ordered by the disbursing officer is responsible for the arithmetical check of all calculations entered in a Measurement Book, and must initial (with date) each account in the book in token of having so checked it.
- xii) The officer making the measurements must calculate the "Contents or Areas" of each measurement and enter it in ink, and abstract the result himself. The Measurement Book should then be submitted to the paying officer for his orders.
- xiii) When an officer or subordinate is required to submit his Measurement Book with his accounts to the Divisional or Sub divisional Officer, he should be supplied, if necessary, with a second book for alternate use.
- xiv) It is inadvisable to record short measurements with the object of retaining a portion of the value of the work done by a contractor as security. It is preferable to record complete measurements of work done and to make formal such deductions from the contractor's bill as may be necessary.
- xv) When submitting a bill for signature, the Sub divisional clerk will draw in red ink one diagonal line across each page of the measurement book on which are recorded the detailed measurements in token of his having made the required arithmetical check and having compared the total with the connected abstract.
- xvi) At the time of signing the bill, the "Officer preparing the bill" will scrutinize the measurement book and make sure that the sub divisional clerk has drawn the red ink lines mentioned approve and has appended his dated initials in token of having exercised the cent per cent arithmetical check. He will then draw in ink one diagonal line across each page of the measurement book on which is recorded the connected abstracts of measurements.
- xvii) At the time of paying the bill the "Disbursing Officer" will draw in red ink a second diagonal line across the same abstract pages and on the last page will make and initial an endorsement in red ink giving the Voucher No. and date.  
 Paid per voucher No.  
 Dated:  
 Initials of Disbursing Officer
- xviii) When receiving back the measurement book and bill the subdivisional clerk will scrutinize the abstract for any omission from this procedure.
- xix) No Measurement Book shall change hands i.e. from one subordinate to another or to a clerk or in office and vice-versa without an endorsement being made after the last measurement handed and signed and dated by both parties. The endorsement will give the name of person who hands over and that of the person who receives the Measurement Book.

- xx) On the occasions of transfers it will be the special duty of the Subdivisional Officers to see that (1) measurement books with the relieved officer at the time are recorded in the transfer papers by the number they bear and are (2) acknowledged by the Relieving Officer and that (3) necessary corrections are made in the name of the officer on the fly leaf of the Measurement Book and (4) the register of Measurement Books as well.
- xxi) In case a Measurement Book is lost, an immediate report should be made of the facts of the case and this report must be promptly forwarded to the Board together with the explanation of all parties concerned or responsible for the loss.

**Question no. 4.**

**i) Register of Dismantlement:**

The form CE-43 Register of Dismantlement has been designed. As and when the material is dismantled from a work, an inventory of all the materials dismantled, whether in serviceable or unserviceable conditions should be prepared and entered in the same in the Register of Dismantlement. The entries in this register are made article wise by entering name of article, present value, Quantity, unit, depreciated value and how the same has been disposed is also recorded. The SDO should verify the inventory and in token record his initial. It is a good tool to have a control over the material dismantled from the works and watch its disposal.

**ii) Average Consumption of Vehicle**

It means the fuel consumed by a vehicle per KM. It can be calculated for a particular period. The quantity of fuel consumed during a particular period is divided by the distance covered by the vehicle (in KM) in that period is called average consumption of vehicle.

**b) Connected Load Register**

In every sub-division and sub-office, connected load register in E.B. form CS-

15 shall be maintained for the following purposes:-

- i) Balancing the load on feeders / phases.
- ii) Anticipating the necessity for augmenting the capacities of feeders, switches, transformers etc.
- iii) Compilation of connection / connected load data.

**Recording of Entries:**

Connected Load Registers will be maintained by J.E. and entries will be made therein in accordance with the following instructions.

- i) The opening entry in the register should be made on 1st April from the connection return for the month of March. If the registers have already been put into force, the totals of the registers up to 31st March shall be verified with the actual load and then carried over to 1st April of the next year.

- ii) A separate register should be used for each sub-station. For Sub-stations of smaller capacity only one register may be used by allotting a portion of it for each sub-station. Capacity of the transformer should be written at the top.
- iii) For the purposes of controlling the balancing of load on various feeders and different phases in a feeder, the connected load of each 3-phase consumer should be proportioned amongst the three phases in a feeder.

**Recording of Connection/Disconnection:**

In order to keep the connected load registers up to date entry of connected load shall be made in this register before any SCO/DCO is signed by AE/ AEE/ XEN(DS) or R.A. It will be obligatory on the part of RA/AE/AEE/ XEN(DS) to check the cross entry of connected load on the SCO or DCO by indicating the page No. of the connected load register where the details of connected load have been entered before any SCO or DCO is signed for issue.

- i) The exact particulars of each consumer connected or disconnected should be entered in columns 1 to 7.
- ii) Connections will be entered in blue ink and disconnections in red ink.

**Month-wise Totals:**

Each register shall be totaled on the last working day of the month and the connection / connected load return prepared from this register.

**Official Responsible for Correctness:**

The register shall be initialed by the J.E. daily in token of the correctness of that day's entries and signed monthly by the AE/AEE/XEN (DS) after the totals have been struck.





## Model Solution, ES, S-9 | 2011, P-II

- 1(a) Yes. Connection can be released in temporary structures subject to the following conditions:  
Applicants requiring connections in the temporary structures such as wooden Stalls, Khokhas and Booths etc. shall be required to furnish a certificate from the Local Authority certifying that the said structure has been authorized by the Local Authority under its bye-laws. Two times security (meter) and three times initial security shall be recovered in such cases.
- 1 (b) A connection can be released for wood based industry in state only if the applicant of such industry furnishes certificate of registration as Small Scale Industry issued by concerned General Manager / District Industries Centre. Otherwise no connection shall be released for wood based industry.
- 1 (c) If a portion of household is predominantly used for the conduct of business, then the consumption in that portion will be separately metered under a separate connection and billed under NRS tariff. In such an event two connections, one under Schedule DS and the other under Schedule NRS can be allowed otherwise the total consumption shall be billed under NRS.
- 1 (d) Consumers in the profession of dairy farming shall be covered under relevant Industrial Tariff as per Tariff Order issued by Punjab State Electricity Regulatory Commission. In case of villages where the house owners keep milch animals (upto 4 Nos.) for their lively hood shall be covered under DS Tariff.

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**Model Solution, ES, 8-9/2011, P-II**

- 2 (a) An applicant of DS/NRS with connected load upto 100 KW and SP/MS categories may avail the sanctioned load in phases, within a period not exceeding six months. The billing of such a consumer, in the interim period, will be on the basis of load actually availed of. The PSPCL will, through a notice inform the applicant to build up the sanctioned load or surrender the unavailed load before the expiry of six months from the date of release of the first phase. If the load is not built up as required, the sanctioned load of the consumer will be reduced to the load actually availed of and billed under the relevant category.

- 2 (b) Purposes of Connected Load Register: Connected Load Register is maintained for the following purposes:-

- i) Balancing the load on feeders / phases,
- ii) Anticipating the necessity for augmenting the capacities of feeders, switches, transformers etc.
- iii) Compilation of connection / connected load data.

Connected Load Registers will be maintained by J.E.

Instructions for recording entries in Connected Load Register: entries will be made in Connected Load Register in accordance with the following instructions:

- i) The opening entry in the register should be made on 1st April from the connection return for the month of March. If the registers have already been put into force, the totals of the registers up to 31st March shall be verified with the actual load and then carried over to 1st April of the next year.
- ii) A separate register should be used for each sub-station. For Sub-stations of smaller capacity only one register may be used by allotting a portion of it for each sub-station. Capacity of the transformer should be written at the top.
- iii) For the purposes of controlling the balancing of load on various feeders and different phases in a feeder, the connected load of each 3-phase consumer should be proportioned amongst the three phases in a feeder.

In order to keep the connected load registers upto date entry of connected load shall be made in this register before any SCO/DCO is signed by AE/AEE/XEN(DS) or R.A. It will be obligatory on the part of RA/AE/AEE/XEN(DS) to check the cross entry of connected load on the SCO or DCO by indicating the page No. of the connected load register where the details of connected load have been entered before any SCO or DCO is signed for issue.

Connections will be entered in blue ink and disconnections in red ink.

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**Model Solution ES, S-9 | 2011, P-II**

- 3(a) Following measures may be taken to check the under-billing of high-end consumers:
- Supply through independent feeders: If supply is being given through an independent feeder, metering shall be carried out at the sending end and the point of supply. Both the meters shall be duly sealed by the authorized officers. If there is wide variation in the consumption recorded by the two meters, requisite investigation shall be carried out and meters shall be tested/recalibrated, if necessary.
- Metering equipment for loads exceeding 100 KW shall be checked by the MMTS atleast once every year or as specified from time to time.
- Bills of high-end consumers shall be thoroughly checked and variation in consumption, if any, shall be thoroughly analyzed. If the consumption is lower in comparison to sanctioned load/demand or the previous consumption, proper investigation shall be carried out.
- Whenever a power transformer is replaced or additional power transformer is installed at a grid sub-station the metering equipment for industrial and bulk supply consumers fed through independent feeders from grid sub-station shall be got checked from ME officers/MMTS to avoid wrong metering due to change of vector groups, if any.
- 3(b) Following officers are competent to sanction the dismantlement of service lines which have remained idle for 6 months or more or where connection has remained disconnected for less than six months but theft of energy is apprehended:-
- SE/Dy.CE : Full Powers
- Sr.XEN/ASE(DS) : Rs. 50,000/-
- AE./AEE/XEN(DS). : Rs. 25,000/-
- All dismantled material shall be entered in the dismantlement register CA-104 and then returned to stores. A monthly report of such dismantlement shall be sent to SE(DS).<sup>3</sup>

3(c)

Following measures may be adopted to counter the pilferage of electricity direct from the supply mains/service line:

- i) No P.T. fuses shall be provided on the secondary side of the supply to KWH/MDI meters. In the cases of existing connections P.T. Fuses, shall be removed immediately.
- ii) No fuse shall be provided on the secondary side of the CTs.
- iii) No cutout / G.O. Switch / Circuit Breaker shall be provided before the meter /metering equipment and service line shall be directly connected to the metering equipment. AE / AEE / XEN / DS shall be personally responsible for compliance of these instructions

b/

**Model Solution ES, S-3/2011, P-II**

- 4 (a) If shortage of cash is detected while verifying closing balance in Cash Book, a CPV be prepared immediately. After approval of CPV, the official handling cash will enter it in the Cash payment column of cash book debiting the account of concerned employee. If excess of cash is detected a CRV may be prepared immediately. After approving the same, the official handling cash will enter it in the receipt column of cash book crediting 'other income' account.
- 4(b) An entry once made in cash book in no circumstances be erased. If a mistake has been made and discovered before the cash book has been submitted to the divisional office the mistake should be corrected by drawing the pen through the incorrect entry by inserting the correct one in red ink between the lines. The disbursing officer shall initial every such correction and invariably date his initials. When the mistake is discovered too late to make such a correction an intimation of the necessary correction should be sent to the divisional office at once accompanied by a proposed journal entry if necessary. Except as indicated above, no correction of an entry once made in Cash Book should be made by SDO unless authorised by the divisional office to do so. The same principle should be followed in correcting errors noticed in divisional Cash Book.

If the accounts of the month have been closed, no corrections of errors in amount, classification or name of work should be made in that book but a journal entry should be prepared for the necessary corrections, a suitable remark in red ink (quoting reference to the correction in accounts) being recorded against the original erroneous entry in the Cash Book.

# Model Solution E.S. Sr 9/2021

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Multiplying factor = CT Ratio/MTR ratio X meter multiplier

$$= 50/30 \times 1 = 1.6667$$

## Consumption:

$$\text{Kwh} = (1808250 - 1791707) \times 1.6667 = 27572$$

$$\text{KVah} = (1843355 - 1826579) \times 1.6667 = 27960$$

$$\text{MDI} = 83.469 \times 1.6667 = 139.10$$

$$\text{Power factor} = 0.99$$

$$\text{Energy charges} = 4.95 \times 27572 = \text{Rs. } 136481/-$$

$$\text{FCA Charges} = 0.08 \times 27572 = \text{Rs. } 2205/-$$

$$\text{Power factor incentive} = 136481 \times 2.25\% = \text{Rs. } 3071/-$$

$$\text{Total charges} = 135615/-$$

$$\text{Meter rent} = \text{Rs. } 555/-$$

$$\text{Service charges} = \text{Rs. } 450/-$$

$$\text{Electricity duty @ } 13\% \text{ on energy charges} = \text{Rs. } 17630/-$$

$$\text{Octroi @ } 10 \text{ paisa per unit} = \text{Rs. } 2757/-$$

$$\text{Total bill amount} = \text{Rs. } 157007/-$$