

राजस्थान-सरकार

तकनीकी शिक्षा निदेशालय राजस्थान, जोधपुर

W-6, गौरव पथ, रेजिडेन्सी रोड, जोधपुर (राज.)

फोन- 0291-2434271 फैक्स नं- 2430398

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क्रमांक :- एफ.27(333)/ई-5/2017-18/18286

दिनांक :- 16-11-2017

-: अल्पकालीन ई-निविदा सूचना संख्या 01/2017-18 :-

राजस्थान के राज्यपाल महोदय की ओर से अधोहस्ताक्षरकर्ता द्वारा राज्य के विभिन्न राजकीय पोलिटेक्निक महाविद्यालयों में उपकरण, मशीनरी, स्टील फर्नीचर, लकड़ी फर्नीचर इत्यादि की आपूर्ति करने के लिए निर्धारित प्रपत्र में बोनाफाईड विनिर्माता/थोक विक्रेता/सोल वितरक/निर्माता/प्राधिकृत डीलर/डीलर/सोल विक्रय/ विपणन एजेंट से ई-टेंडरिंग प्रक्रिया के अंतर्गत रुपये 900.00 लाख की ऑन लाईन निविदाएँ आमंत्रित की जाती हैं। निविदाएँ में दी जाने वाली दरें दिनांक 31.3.2018 तक मान्य होगी :-

आईटम संख्या	निविदा का विवरण	अनुमानित मात्रा	अनुमानित लागत (लाखों में)	धरोहर राशि (₹)	निविदा शुल्क (अप्रतिदेय)	निविदा डाउनलोड प्रारम्भ की दिनांक व समय	निविदा अपलोड करने एवं निर्धारित शुल्क जमा करने की अन्तिम दिनांक व समय	तकनीकी निविदा खोलने की तिथि व समय
1	फिजिक्स, केमेस्ट्री		4.00	8000	200	5.12.2017 10.00 A. M.	21.12.2017 10.00 A. M.	22.12.2017 11.00 A. M.
2	क्रंकीट, मेटेरियल टेस्टिंग, पी.एच.ई., सोईल, सर्वे लेब, एप्लाइड लेब		45.00	90000	400	5.12.2017 10.00 A. M.	21.12.2017 10.00 A. M.	22.12.2017 11.00 A. M.
3	मेट्रो लोजी लेब		50.00	100000	400	5.12.2017 10.00 A. M.	22.12.2017 10.00 A. M.	23.12.2017 11.00 A. M.
4	ओटो मोबाईल, आर.ए.सी. लेब		10.00	20000	400	5.12.2017 10.00 A. M.	22.12.2017 10.00 A. M.	23.12.2017 11.00 A. M.
5	आई. सी. , फ्लूड, वैल्विंग लेब		20.00	40000	400	5.12.2017 10.00 A. M.	22.12.2017 10.00 A. M.	23.12.2017 11.00 A. M.
6	कारपेन्ट्री, फिटिंग, वैल्विंग लेब		10.00	20000	400	5.12.2017 10.00 A. M.	22.12.2017 10.00 A. M.	23.12.2017 11.00 A. M.
7	डिजिटल माइक्रोप्रोफेसर लेब		45.00	90000	400	5.12.2017 10.00 A. M.	26.12.2017 10.00 A. M.	27.12.2017 11.00 A. M.
8	इलेक्ट्रॉनिक्स लेब		18.00	36000	400	5.12.2017 10.00 A. M.	26.12.2017 10.00 A. M.	27.12.2017 11.00 A. M.
9	इलेक्ट्रॉनिक्स वर्कशॉप		18.00	36000	400	5.12.2017 10.00 A. M.	26.12.2017 10.00 A. M.	27.12.2017 11.00 A. M.
10	इन्स्ट्रुमेंटेशन लेब		30.00	60000	400	5.12.2017 10.00 A. M.	26.12.2017 10.00 A. M.	27.12.2017 11.00 A. M.
11	पॉवर इलेक्ट्रॉनिक्स		30.00	60000	400	5.12.2017 10.00 A. M.	27.12.2017 10.00 A. M.	28.12.2017 11.00 A. M.
12	मेजरमेंट एण्ड इन्स्ट्रुमेंटेशन, मशीन लेब		9.00	18000	400	5.12.2017 10.00 A. M.	27.12.2017 10.00 A. M.	28.12.2017 11.00 A. M.

निविदा प्रपत्र अनुसार

आईटम संख्या	निविदा का विवरण	अनुमानित मात्रा	अनुमानित लागत (लाखों में)	धरोहर राशि (₹)	निविदा शुल्क (अप्रतिदेय)	निविदा डाउनलोड प्रारम्भ की दिनांक व समय	निविदा अपलोड करने एवं निर्धारित शुल्क जमा करने की अन्तिम दिनांक व समय	तकनीकी निविदा खोलने की तिथि व समय
13	इलेक्ट्रीकल वर्कशॉप		30.00	60000	400	5.12.2017 10.00 A. M.	27.12.2017 10.00 A. M.	28.12.2017 11.00 A. M.
14	इंगलिश लेंगवेज लेब		50.00	100000	400	5.12.2017 10.00 A. M.	28.12.2017 10.00 A. M.	29.12.2017 11.00 A. M.
15	स्टील फर्नीचर		50.00	110000	400	5.12.2017 10.00 A. M.	28.12.2017 10.00 A. M.	29.12.2017 11.00 A. M.
16	बुडन फर्नीचर		12.00	24000	400	5.12.2017 10.00 A. M.	28.12.2017 10.00 A. M.	29.12.2017 11.00 A. M.
17	मैकेनिकल ब्रॉच उपकरण		44.00	88000	400	5.12.2017 10.00 A. M.	28.12.2017 10.00 A. M.	29.12.2017 11.00 A. M.
18	सिविल ब्रॉच उपकरण		19.00	38000	400	5.12.2017 10.00 A. M.	01.01.2018 10.00 A. M.	02.01.2018 11.00 A. M.
19	इलेक्ट्रीकल ब्रॉच उपकरण		19.00	38000	400	5.12.2017 10.00 A. M.	01.01.2018 10.00 A. M.	02.01.2018 11.00 A. M.
20	डिजिटल लेब उपकरण		22.00	44000	400	5.12.2017 10.00 A. M.	01.01.2018 10.00 A. M.	02.01.2018 11.00 A. M.
21	कम्प्युनिकेशन लेब		100.00	200000	400	5.12.2017 10.00 A. M.	04.01.2018 10.00 A. M.	05.01.2018 11.00 A. M.
22	थर्मल, मशीन लेब		100.00	200000	400	5.12.2017 10.00 A. M.	04.01.2018 10.00 A. M.	05.01.2018 11.00 A. M.
23	कम्प्यूटर		100.00	200000	400	5.12.2017 10.00 A. M.	04.01.2018 10.00 A. M.	05.01.2018 11.00 A. M.
24	इलेक्ट्रोनिक्स ब्रॉच उपकरण		65.00	120000	400	5.12.2017 10.00 A. M.	04.01.2018 10.00 A. M.	05.01.2018 11.00 A. M.
			900.00	1800000				

- विभिन्न निविदाओं के संबंध में विस्तृत शर्तें एवं अन्य विवरण उपकरण के पूर्ण स्पेशिफिकेशन कार्यालय समय में वेब साईट www.dte.rajasthan.gov.in, www.dipronline.org एवं www.sppp.rajasthan.gov.in (पोस्टल अधिनियम) पर देखा जा सकता है। निविदा प्रपत्र को वेब साईट www.eproc.rajasthan.gov.in से डाउनलोड/अपलोड किया जा सकता है।
- ऑन लाईन निविदा प्रक्रिया में वे ही संवेदक भाग ले सकेंगे जिनके पास **Digital Signature Certificate** होने के साथ ही उक्त वेब साईट पर पंजीकृत होंगे।
- निविदा शुल्क व धरोहर राशि का पृथक पृथक डिमाण्ड ड्रॉफ्ट सहायक निदेशक, प्राविधिक शिक्षा निदेशालय राजस्थान, जोधपुर के नाम से देय होगा एवं ई-टेंडरिंग प्रक्रिया शुल्क के डिमाण्ड ड्रॉफ्ट राशि रुपये 1000/- का **M.D., R.I.S.L.** जयपुर के नाम से देय हो इस कार्यालय में निविदा खोलने के निर्धारित समय तक जमा करना अनिवार्य है। अन्यथा निविदा नहीं खोलने की पूर्ण जिम्मेवारी फर्म की होगी।
- किसी भी प्रकार के स्पष्टीकरण अथवा शुद्धिकरण की नवीनतम जानकारी हेतु निविदा प्रपत्र डाउनलोड करने वाले निविदादाता नियमित रूप से उक्त वेब साईट का अवलोकन करते रहे।
- उपकरण, मशीनरी, स्टील/लकड़ी फर्नीचर की आपूर्ति संबंधित संस्थानों में 50 दिवस में करनी होगी। अन्यथा नियमानुसार एल. डी. चार्जज की कटौति की जायेगी।
- निर्धारित तिथियों को राजकीय अवकाश होने निविदाएँ उसके अगले कार्य दिवस को उक्त निर्धारित समय पर खोली जायेगी।

7. सशर्त निविदा स्वीकार नहीं होगी।
8. समस्त विवादों का न्यायिक क्षेत्र जोधपुर (राजस्थान) रहेगा।
9. राज्य में राजस्थान लोक उपापन पारदर्शिता अधिनियम-2012 व नियम-2013 प्रभावशील हैं। अतः निविदा पर उक्त अधिनियम व नियम के सभी प्रावधान प्रभावशील होंगे।
10. किसी भी निविदा को पूर्ण/आंशिक स्वीकार करने अथवा बिना कारण बताये अस्वीकृत करने के समस्त अधिकार विभाग के पास सुरक्षित रहेंगे। जिसके संबंध में फर्म से किसी प्रकार के प्राप्त पत्रों पर विचार नहीं किया जायेगा।
11. निविदा में दर्शाये आईटमों की मात्रा एवं आपूर्ति अवधि घटाई/बढ़ाई जाने के समस्त अधिकार विभाग के पास सुरक्षित रहेंगे। जिसके संबंध में फर्म से किसी प्रकार के प्राप्त पत्रों पर विचार नहीं किया जायेगा।
12. प्रत्येक उपकरण की दर एक ही अंकित (टेक्स/अन्य चार्जज जोडकर) करने में प्राथमिकता प्रदान करे।
13. निविदा के साथ दिये जाने वाले समस्त दस्तावेज पूर्ण रूप से भरे जायेंगे।
14. वेट/सीएसटी चुकता प्रमाण पत्र (31.3.2017 तक) संलग्न करें।
15. निविदा के साथ दिये जाने वाले दस्तावेजों के अनुसार पूर्ण भरे हुए एवं आवश्यकता अनुसार समस्त दस्तावेज संलग्न करें। अन्यथा निविदा खोलने के संबंध में विभाग द्वारा लिया गया निर्णय अन्तिम होगा।
16. अगर आपको क्रयादेश जारी किया जाता है तो क्रयादेश में वर्णित आपूर्ति अवधि में उपकरण इत्यादि की आपूर्ति करावें। अगर किन्ही परिस्थितियों के दृष्टिगत आप समयावधि में आपूर्ति नहीं कर सकते है तो आपूर्ति अवधि समाप्त होने से पहले विभाग को लिखित में सूचित करेंगे। अन्यथा संस्था प्रधान द्वारा आपूर्ति स्वीकार नहीं की जायेगी। नियमानुसार निदेशालय द्वारा आपूर्ति अवधि बढ़ाने के पश्चात् ही फर्नीचर की आपूर्ति करावें।
17. राजस्थान की लघु औद्योगिक इकाईयों जो निविदित आईटम के लिये पंजीकृत है, द्वारा Form EM-II उद्योग आधार मेमोरेण्डम & Annexure-II की प्रति प्रस्तुत करने पर धरोहर राशि अनुमानित लागत ½ % एवं निविदा शुल्क निर्धारित दर का 50 % देय होगा। इस संबंध में निविदा आईटम EM-II उद्योग आधार मेमोरेण्डम esa सम्मिलित होने के आशय का पृथक शपथ पत्र साथ में संलग्न करना अनिवार्य होगा।
18. डाक द्वारा विलम्ब के लिये विभाग जिम्मेवार नहीं होगा।
19. क्रय किये जाने वाले उपकरण, मशीनरी, स्टील फर्नीचर एवं लकड़ी फर्नीचर की आपूर्ति संबंधित राजकीय पोलिटेक्निक महाविद्यालय में निर्देशानुसार करनी होगी। इसके लिये अलग से भुगतान देय नहीं होगा।
20. उपकरण/मशीनरी निविदा से संबंधित एनेक्चर-एच में किसी भी आईटम में Sample required लिखा गया है उस आईटम से संबंधित सेम्पल निविदा शुल्क, धरोहर राशि एवं प्रोसेसिंग फीस डी. डी. के साथ जमा करवाना होगा। अन्यथा उस आईटम को Tender में CONSIDER नहीं किया जायेगा जिसकी पूर्व जिम्मेवारी फर्म की होगी।



निदेशक, तकनीकी शिक्षा,

GOVERNMENT OF RAJASTHAN

DIRECTORATE OF TECHNICAL EDUCATION RAJASTHAN, JODHPUR

W-6, GAURAV PATH, JODHPUR. Phone- 0291-2434271 Fax- 2430398

Visit us: www.dte.rajasthan.gov.in e-mail ID: dte_raj @yahoo..com

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BID DOCUMENT FORM

1. Name of item :- _____
2. Name & full address of the firm submitting the bid along with Tel. No., Fax No. & e-mail/
Mobile No.
M/s :
Full Address :
Tel. No./FAX/Mobile :
e-mail :
3. Addressed to :- **Director (Education), Directorate of Technical Education Rajasthan,
Jodhpur- 342011** (e-mail :- dte_raj@yahoo.com)
4. Reference : e-Tender Notice No...../2017-18 Dated
5. The Processing fee of Rs. 1000/-, Bid fee and Bid Security (EMD) as per tender notice has been deposited vide separate demand drafts as per enclosed scanned copies.
6. All documents required as per bid documents are enclosed.
7. Goods will be delivered within the stipulated delivery period from the date of the supply order at Jodhpur or the designated place mentioned in the work order.
8. I/ We agree to abide by all the Terms & conditions mentioned in e-Tender Notice No.- /2017-18 dated issued by the Department and also agree to further Terms & Conditions including special conditions of the said tender notice given in the attached sheets (all the pages of which has been signed with stamp by me/ us in token of my/our acceptance of the terms & condition mentioned therein) If any page of the tender document is inadvertently left without seal and signature, it will be deemed as signed and sealed.

**SIGNATURE OF THE BIDDER
WITH SEAL AND DESIGNATION**

* The words bid or tender and bidder or tenderer where ever mentioned in attached documents are synonyms and having same meaning.

GOVERNMENT OF RAJASTHAN
DIRECTORATE OF TECHNICAL EDUCATION RAJASTHAN, JODHPUR
Instruction to Bidders for Online Bidding (e-Tendering)

Information to be disseminated to prospective bidder regarding on line Bidding.

1.	The Bid document can be downloaded from web site http://eproc.rajasthan.gov.in & submitted online in electronic format on same web site.
2.	Office address :- Director (Education), Directorate of Technical Education Rajasthan, Jodhpur-342011 Phone- 0291-2434271 Fax- 2430398 e-mail ID: dte_raj@yahoo..com
3.	To participate in online Bids, Bidders will have to possess Digital Signature Certificate (type II or type III) as per information Technology Act-2000 using which they can sign their electronic bids, Bidder can procure the same from any CC approved certifying agency, i.e. TCS safecrypt, Ncode etc. or they may contact e-procurement Cell Department of It & C, Government of Rajasthan for further assistance: Bidder who already have a valid Digital Certificate need not required to procure a new Digital Certificate. Contact No. : 0141-4022688 (Help desk 10 am to 6 pm on all working days) E mail: eproc@rajasthan .gov.in Address: e-Procurement Cell, RISL, Yojna Bhawan, Tilak Marg, C-Scheme, Jaipur.
4.	Before electronically submitting the Bid, it should be ensured that all Bid papers including conditions of contract etc. are digitally signed by the Bidder and filled up as per the Bid Guidelines.
5.	Training for the bidders on the usage of e-tendering System is also being arranged by RISL on regular basis. Bidders interested for training may contact e-Procurement Cell, RISL for booking the training slot.
6.	Bidders are also advised to refer “Bidders mannul” available under “Downloads” section for further details about the e-tendering process.
7.	RISL Processing fees is Rs. 1000.00[in addition to Bid form Fees & Bid Security (EMD)] which are as per e-tender notice (refer circular no. 19/2011 dated 30.09.2011)
8.	Bid security (Earnest Money) and Bid fees (in the form of Bankers Cheque/ demand draft in favour of Assistant Director, Directorate of Technical Education Rajasthan, Jodhpur payable at Jodhpur) and processing fees (by way of Demand draft in favour of MD, RISL, Jaipur payable at Jaipur) to be submitted physically at the office of undersigned up to the stipulated time & date of opening of Technical Bid, failing which the e-tender will not be admitted.
9.	The following documents must be attached with Technical Bid (First Cover in pdf) failing which Bid is liable to be rejected. <ol style="list-style-type: none"> a. Scanned copies of BC/DD’s of Bid fee, Processing fee & Bid security (EMD). b. Scanned copies of Bid document form along with Conditions of tender (SR-16) & Special Terms & Conditions duly signed and sealed. c. G.S.T. registration certificate and G.S.T. declaration (as per Annexure F) . d. Instructions to bidders document duly signed & sealed by the bidder e. Scanned copy of Power of attorney for authorised signatory to sign the tender document. f. All the technical specification and details of the tendered item and technical specification in tabular form must be submitted as indicated at Annexure - H g. Price charging certificate as per (Annexure G). h. Declaration by the tenderer (SR 11). Annexure -E i. Scanned copy of PAN card. j. Annexure A, B, C & D duly signed with seal. <p style="text-align: center;">Signature of bidder with seal</p>

	<p>k. Scanned copy of form Entrepreneurial Memorandum Part-II/ Udyog Aadhar and Annexure –I to avail benefit of EMD at reduced rate for SSI unit(If required). A separate affidavit (Annexure-K) in support for inclusion of all tendered items in the Entrepreneurial Memorandum Part-II/Udyog Aadhar issued by Industries Department must be submitted along with the bid .</p> <p>l. Prescribed check list</p> <p>m. Format of RTGS/NEFT as per Annexure –J</p> <p>n. Any other documents which the bidder wants to submit and/ or any document as per tender.</p> <p>o. Certificate of Annual Turnover from Chartered Accountant.</p> <p>p. Authorization certificate in Annexure-L (if applicable)</p> <p><u>Note: The bidder must upload scanned copies of all the originally down loaded documents (Duly filled and seal-signed) of this tender only.</u></p> <p>Second cover (Financial/Price bid/BOQ-xls) should contain details of price quoted in BOQ.</p> <p>In absence of the above or wrongly placing the required documents in any other cover or not mentioning the desired information at the specified place/ column, the bid may not be considered and will be rejected. The provisions of RTPP Rules 2013 & RTPP Act 2012 will prevail in this regard.</p>
10.	Incomplete & conditional Bid in any respect will be rejected without any information.
11.	The Director (Education), Directorate of Technical Education Rajasthan, Jodhpur has reserve the right to reject all/ any part of Bid received from the firms/ Bidders without assigned any reason thereof.

Director (Education)

I/we have carefully read and understood above instruction

Signature of bidder with seal

SPECIAL CONDITIONS OF TENDER

01. The bidders are requested to submit their bids prior to last date of submission to avoid Non-submission of their bids up to prescribed date due to non-availability of / hanging of website at last moments. The date of submission of bids will not be extended if system is hang up in last hours or congestion.
02. In case, the date fixed for opening of the tenders be declared as a public holiday, the bid shall be opened on the next date on which office re-opens after such holiday(s).
03. Physical submission of bids is not allowed.
04. Tenders shall be valid for a minimum period of **90 days** after the date of opening of tender. Tender mentioning a shorter validity period than specified are likely to be rejected.
05. The bidders who are interested in bidding can download tender documents from **www.eproc.rajasthan.gov.in** up to the stipulated date & time.
06. The bids will have to be Digitally signed by the bidder and submitted online in two covers in electronic format only on website **www.eproc.rajasthan.gov.in**
07. Furnishing of tender offer shall be strictly in the manner as prescribed in Instructions to bidder and terms & conditions of tender, failing which the tender is liable for rejection.
08. The following documents are to be uploaded in **Two covers** of the bid

(A) TECHNICAL BID (First cover-pdf) :

- a. Scanned copies of BC/DD's of Bid fee, Processing fee & Bid security (EMD).
- b. Scanned copies of Bid document form along with Conditions of tender (SR-16) & Special Terms & Conditions duly signed and sealed.
- c. G.S.T. registration certificate and G.S.T. declaration (as per Annexure F) .
- d. Instructions to bidders document duly signed & sealed by the bidder
- e. Scanned copy of Power of attorney for authorised signatory to sign the tender document.
- f. All the technical specification and details of the tendered item and technical specification in tabular form must be submitted as indicated at Annexure - H
- g. Price charging certificate as per (Annexure G).
- h. Declaration by the tenderer (SR 11). (Annexure E).
- i. Scanned copy of PAN card.
- j. Annexure A, B, C & D duly signed with seal.
- k. Scanned copy of form Entrepreneurial Memorandum Part-II/Udhyog Adhar and Annexure -I to avail benefit of EMD at reduced rate for SSI unit(If required). **A separate affidavit (Annexure-K) in support for inclusion of all tendered items in the Entrepreneurial Memorandum Part-II /Udyog Aadhar issued by Industries Department must be submitted along with the bid. (Format attached at annexure-K)**
- l. Prescribed check list

Signature of tenderer with seal

- m. Fomat of RTGS/NEFT as per Annexure -J
- n. Any other documents which the bidder wants to submit and/ or any document as per tender.
- o. Certificate of Annual Turnover from Chartered Accountant.
- p. Authorisation certificate in Annexure-L (if applicable)

Note: The bidder must upload scanned copies of all the originally down loaded documents (Duly filled and seal-signed) of this tender only.

In absence of the above or wrongly placing the required documents in any other cover or not mentioning the desired information at the specified place/ column, the bid may not be considered and will be rejected. The provisions of RTPP Rules 2013 & RTPP Act 2012 will prevail in this regard.

(B) FINANCIAL BID (Second cover-xls) :

It should contain details of price quoted in BOQ.

Note:- The Financial bid of only Technically qualified bidders will be opened. The date of opening of financial bid will be displayed on www.eproc.rajasthan.gov.in .

- 09. The tenderers shall quote F.O.R. destination prices only. indicating the Freight inclusive of unloading and stacking and Insurance charges in Financial/Price Bid/BOQ. They will also indicate the prevailing rates of G.S.T (whether inclusive or exclusive) in the quoted prices. If the Financial/Price Bid/BOQ is not filled completely, the offer is likely to be ignored.
- 10. Material/Equipment on order shall be required to be dispatched on "Freight paid basis".
- 11. Before electronically submitting the tenders, it should be ensured that all tender documents enlisted above including conditions of contract are signed & sealed on each & every page by the authorized representative of the firm after filling requisite information/details desired in the specification & Qualifying Requirement.
- 12. The complete set of documents must be then furnished **duly digitally signed through DSC of bidders company** and submitted on www.eproc.rajasthan.gov.in in time as per **checklist** provided with the tender document . The checklist along with relevant page nos. shall also be submitted with the tender.
- 13. All tenders, in which any of the prescribed conditions are not fulfilled or which have been vitiated by errors in calculations, totaling or other discrepancies or which contain over writing in figures or words or corrections not initialed and dated, may be liable to rejection.
- 14. Payment shall be made to supplier/contractor through RTGS/NEFT for quick and safe transfer of funds across the country. The charges for transfer through RTGS/NEFT shall be on the part of supplier/ contractor. The supplier/ contractor shall furnish particulars to the payment making authorities of DTE in prescribed format to be provided by the purchaser. **(Annexure- J)**
- 15. No conditional tenders shall be accepted and will be rejected summarily forthwith.
- 16. The DTE reserves the right to cancel the tender at any time without assigning any reasons. The DTE does not bind himself to accept the lowest or any tender or any part of the tender and shall not assign any reason(s) for the rejection of any tender or a part thereof.

Signature of tenderer with seal

- 17. No refund of tender fee is claimable for tenders not accepted or forms not submitted.

18. Payment of Bill will be made by **Director (Education), Technical Education, Jodhpur** after the receipt of material and found to entire satisfaction and as per specification and good conditions mentioned there in supply order.
19. The supply will be accepted only on working day in the office working hours.
20. The Tenderer would provide Guarantee for an appropriate period from the date of delivery of the said goods in good conditions. During Course of Guarantee period, the items will have to got repaired/replaced FREE OF COST at Concerning Institute.
21. Quantity of items can be increased/decreased/cancelled. Department is competent to accept/refuse the Tender/Tenders without quoting any reason thereof.
22. **The Samples where ever mentioned in technical specification (Annexure-H) must be submitted in this Directorate alongwith physical submission of D.D. of EMD.**
23. **The Scanned copies of Catalogue/Literature and/or Authorisation Certificate (Duly seal-signed by the bidder) where ever demanded in technical specification (Annexure-H) must be uploaded alongwith the bid otherwise concerned items will not be considered for technical evaluation.**
24. **The Average Annual Turnover of the bidder for last three financial years (2014-15 to 2016-17) or any year of the last three year will be minimum Two times of the tender cost as per NIT but minimum Turnover of the bidder must be more than Rs. 20.00 Lacs. A certificate issued by the Chartered Accountant (Showing the Annual Turnover of last three years) with their Signature, Registration No. & Seal must be submitted along with the bid.**
25. **All applicable statutory deductions regarding GST, income tax etc. are to be made from the suppliers bill.**
26. All other Terms and conditions shall be as specified in the Rajasthan Transparency in Public Procurement Act, 2012, Rajasthan Transparency in Public Procurement Rule, 2013 and will prevail.

Enclosed : As Above

**Join. Director/Assistant Director
for DIRECTOR (EDUCATION)
TECHNICAL EDUCATION RAJASTHAN
JODHPUR**

Signature of tenderer with seal

GOVERNMENT OF RAJASTHAN

DIRECTORATE OF TECHNICAL EDUCATION RAJASTHAN, JODHPUR

W-6, GAURAV PATH, JODHPUR. Phone- 0291-2434271 Fax- 2430398

Visit us: www.dte.rajasthan.gov.in e-mail ID: dte_raj@yahoo.com

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"CONDITIONS OF TENDER AND CONTRACT FOR OPEN TENDER"

Note : Tenderers should read these conditions carefully and comply strictly while sending their tenders.

1. Tenders are hereby invited in e-tender system for purchase of
Tenders are to be submitted online in electronic format on website <http://eproc.rajasthan.gov.in>. The tender document/specification can be downloaded from above mentioned website
- 1.1 **“Tenders by Bonafide Dealers”** :- Tenders shall be given only by Bonafide Dealers in the goods. They shall therefore, furnish a declaration in the S.R. form 11. (Copy enclosed).
- 2.1 Any change in the constitution of the firm, etc. shall be notified forthwith by the contractor in writing to the purchase officer and such charge shall not relieve any former member of the firm, etc. from any liability under the contract.
- 2.2 No new partner/partners shall be accepted in the firm by the contractor in respect of the contract unless he/they agree to abide by all its terms, conditions and deposit with the purchase officer a written agreement to this effect. The contractors receipt for acknowledgement or that of any partners subsequently accepted as above shall bind all of them and will be sufficient discharge for any of the purpose of the contract.
3. **G.S.T. REGISTRATION:** No Dealer who is not registered under the **G.S.T.** Act prevalent in the state where his business is located shall tender. The **G.S.T.** registration number should be quoted & self attested copy of **G.S.T.** Registration should be enclosed with tender.
4. Tenderer will have to submit copy of PAN CARD duly attested by the Tenderer without which tender may not be considered.
5. Tender forms shall be filled in ink or typed. No Tender filled in pencil shall be considered. The Tenderer shall sign the Tender form at each page and at the end including amendment sheet enclosed in token of acceptance of all the terms and conditions of the tender.
6. Rate shall be written both in Words and Figures. There should not be errors and or over writing. Correction if any, should be made clearly and initialed with dates. The Rates should mention element of the G.S.T. separately.
7. All Rates quoted must be F.O.R. Destination and should include all incidental charges except octroi. G.S.T., which should be shown separately. In case of Local supplies the rates should include all taxes etc. and no cartage of Transportation charges will be paid by the Government and the delivery of the goods shall be given at the premises of purchase officer/F.O.R. Destination Stores as mention in tender Document. Goods to be purchased are for the purpose of official use. Hence, octroi is not payable. The rates, therefore, should be exclusive of octroi and local tax. In case goods to be purchased are for the purpose of resale or use as manufacture of any goods for sale. the Rates shall inclusive of octroi and local tax. In the former case a certificate in the prescribed form will be furnished along with the supply order.

Signature of tenderer with seal

8. **COMPARISON OF RATES** : Due to applicability of G.S.T. in place of V.A.T. the comparison of rates between firms of Rajasthan & out of Rajasthan will be made as per applicable rules (if any) made by the State Government up to the date of opening of financial Bid.
9. **PRICE PREFERENCE** : Price preference will be given to the goods produced or manufactured by industries of Rajasthan over goods produced or manufactured by industries outside Rajasthan as per purchase of stores (as per Finance Department Notification no. F1 (8)/FD/GF&AR/2011 dated 19.11.2015 or as per any amendment made by the State Government there after) Rules.
- 9.1 Preference to Local Industries Registered with the Director of Industries. Rajasthan, Jaipur over the Tendering Units, outside the State of Rajasthan as per the policy approved by the government will be operative.
- 9.2 Under the different situations between local tendering unit of S.S.I. Rajasthan and outside the State of Rajasthan the policy as laid down by the Government will be operative & rule amended up to date shall be applicable. (Amended vide Finance Department Order No. F-15 (1) FD/CSPO/9608/2000 Date 21/03/2000).
10. **VALIDITY** : Tenders shall be valid for a period of **90 days** from the date of opening of Tender.
11. The approved supplier shall be deemed to have carefully examined the conditions, specifications, size, Make and drawings, etc. of the goods to be supplied. If he has any doubts as to the meaning of any portion of these conditions or of the specifications, drawing, etc. he shall before signing the contract, refer the same to the purchase officer and get clarification
12. The contractor shall not assign or sublet his contract or any substantial part there of to any other agency.
- 13.1 **SPECIFICATIONS** : All article supplied shall which strictly confirm to specifications. Trade mark laid down in the Tender form and wherever articles have been required according to ISI specifications. Those articles should confirm strictly to those specification and should bear such marks.
- 13.2 The supply of articles marked with a struck/at serial number shall in addition, confirm strictly to the approved samples. The supply shall be of the very best quality and description. The decision of the confirm to the specification and are in accordance with the samples. If any, shall be final and binding on the tenderers.
- 14.1 **WARRANTY/GUARANTEE CLAUSE** : The Tenderer would give guarantee that the goods/stores/ articles would continuous to confirm to the description and quality as specified for a minimum period of **12 Months** from the date of delivery of the said goods/ stores/articles to be purchased and that not with standing the fact that the purchaser may have inspected and/or approved the said good/stores if during the aforesaid period of 12 months. The said goods/stores/articles to discovered to confirm to the description and quality aforesaid or have determined (and the decision of the purchase officer in that behalf will be final and conclusive). The purchaser will be entitled to reject the said goods/stores/articles or such portion there of as may be discovered not to confirm to the said description and quality, on such rejection the goods/articles/stores will be at the seller's risk and all the provision relating to rejection of goods. etc. shall apply. The tenderer shall if so called upon to do replace the goods, etc.

Signature of tenderer with seal

- or such portion there of as is rejection by the purchase officer, otherwise the tenderer shall pay such damage as may arise by reason of the breach of the condition here in contained. Nothing here in contained shall prejudice any other right of the purchase officer in that behalf under this or otherwise.
- 14.2 In case of machinery and equipment also guarantee will be given as mentioned in clause (i) above and the tenderer shall during the guarantee period replace the parts if any remove any manufacturing defect if found during the above period so as to make machinery and equipment operative. The Tenderer shall also replace machinery and equipments in case it is found defective which cannot be put to operations due to manufacturing defect etc.
- 14.3 In case of machinery and equipment specified by the purchase, officer the tenderer shall be responsible for carrying out annual maintenance and repairs on the terms and conditions as may be agreed. The Tenderer shall also be responsible to ensure adequate regular supply of spare parts needed for as specific type of machinery and equipments whether under their annual maintenance and repairs rate contract or otherwise. In case of change of model he will give sufficient notice to the purchase officer who may like to purchase spare parts from them to maintain, the machinery and equipment in perfect condition.
- 15.1 INSPECTION:** The purchase officer or his duly authorized representative shall at all reasonable time have access to the suppliers premises and shall have the power at all reasonable time to inspect and examine the material and workmanship of the goods/equipments/machineries during manufacturing process or afterwards as may be decided.
- 15.2 The tenderer shall furnish complete address of the premises of his office, godown and workshop where inspection can be made together with name and address of the person who is to be contacted for the purpose. In case of those dealers who have newly entered in business a letter of introduction from their bankers will be necessary.
- 16. SAMPLES:** Tender for articles marked within the schedule shall be accompanied by two set of samples of the articles tendered properly packed. Such samples if submitted personally will be received in the office. A receipt will be given for each samples by the officer receiving the samples. Samples if sent by train, etc. should be dispatch freight paid and the R.R. or G.R. should be sent under a separate registered cover. Samples for catering food items should be given in a plastic box or in polythene bags at the cost of the tenderer.
17. Each samples shall be marked suitable either by written on the sample or on a slip or durable paper securely, fastened to the sample the name of the tenderer and serial number of the item, of which it is a sample in the schedule.
18. Approved samples would be retained free of cost up to the period of six month after the expiry of the contract. The government shall not be responsible for any damage, wear and tear or loss during testing, examination etc. during the period these samples are retained. The samples shall be collected by the tenderer on the expiry of the stipulated period. The Government shall in no way make arrangements to return the samples. The samples uncollected within 9 months after expiry of contract shall be forfeited by the government and no claim for their cost etc. shall be entertained.
19. Samples not approved shall be collected by the unsuccessful tenderers. The government will not be responsible for any damage, wear and tear or loss during testing examination etc. During the period these samples are retained. The uncollected samples shall be forfeited and no claim for their cost etc. shall be entertained.

Signature of tenderer with seal

20. Supplies when received shall be subject to inspection to ensure whether they confirm to the specifications or with the approved samples. Where necessary or prescribed or practical, tests shall be carried out in government laboratories, reputed testing house. Like Shri Ram Testing house, New Delhi and the like another supplies will be accepted only where the articles confirm to the standard of prescribed specifications as a result of such tests.

21. **DRAWLS OF SAMPLES :** In case of tests, samples shall be drawn in four sets in the presence of tenderer or his authorize representative and properly sealed in their presence. Once such set shall be given to them, one or two will be sent to the laboratories and/or testing house and the third or fourth will be retained in the office for reference and record.

22. **TESTING CHARGES :** Testing charges shall be borne by the Government. In case urgent testing is desired to be arranged by the tenderer or in case of test results showing that suppliers are not up to the prescribed standards or specifications, the testing charges shall be payable by the tenderer.

23.1 **REJECTION :** Article not approved during inspection or testing shall be rejected and will have to be replaced by the tenderer at his own cost within the time fixed by the purchase officer.

23.2 If however due to exigencies of government work, such replacement either in whole or in part, is not considered feasible, the purchase officer after giving an opportunity to the tenderer of being heard shall for reasons to be recorded, deduct a suitable amount from the approved rates. The deduction so made shall be final.

24. The rejected articles shall be removed by the tenderer within **15 days** of intimation of rejection after which purchase officer shall not be responsible for any loss, shortage or damage and shall have the right to dispose of such articles as he thinks fit, at the tenderer risk and on his account.

25. The tenderer shall be responsible for the proper packing so as to avoid damage under normal condition of transport by sea, rail and road or air and delivery of the material in good condition to be consignee at destination. In the event of any loss and breakage or leakage or any shortage the tenderer shall be liable to make good such loss and shortage found at the check/inspection of the materials by the consignee. No extra cost on such account shall be admissible.

26. The contract for the supply, can be repudiated at any time by the purchase officer, if the supplies are not made to his satisfaction after giving an opportunity to the tenderer of being heard and recording of the reasons for repudiation.

27. Direct or Indirect canvassing on the part of the tenderer or his representative will be disqualification.

28.1. **DELIVERY PERIOD**

The Tenderer whose tender is accepted shall arrange supplies within a period as mentioned below from the date of supply order-

S.No.	Items	Quantity	Delivery Period
			50 Days

28.2. At the time of award of contract, the quantity of goods, works or services originally specified in the bidding documents may be increased, but such increase shall not exceed 50% of the quantity specified in the bidding documents. It shall be without any change in the unit prices or other terms and conditions of the bid and the bidding documents.

Signature of tenderer with seal

- 28.3 If the procuring entity does not procure any subject matter of procurement or procures less than the quantity specified in the bidding documents due to change in circumstances, the bidder shall not be entitled for any claim or compensation except otherwise provided in the bidding documents.
- 28.4 Repeat orders for extra items or additional quantities may be placed on the rates and conditions given in the contract. Delivery or completion period may also be proportionately increased. The limits of repeat order is 50% of the value of goods or services of the original contract.
- 29.1 EARNEST MONEY:** Tender shall be accompanied by an earnest money as mentioned in tender notice, without which tenders will not be considered. The amount should be deposited in either of the following forms in favour of **Assistant Director, Technical Education Rajasthan, Jodhpur.**
1. Cash through Treasury Challan deposited under head
 - 8443-Civil deposit**
 - 103-Security deposits**
 2. Bank Drafts/Bankers Cheques of the schedule Bank.
- 29.2 **REFUND OF EARNEST MONEY :** The Earnest Money of unsuccessful tenderes shall be refunded soon after a final acceptance of tender.
- 29.3 **PARTIAL EXEMPTION FROM EARNEST MONEY :-** Firms which are registered with Director of Industries. Rajasthan shall furnish the amount of earnest money in respect of items for which they are registered as such subject to their furnishing registration certificate in original or Self Attested Photostat copy issued from the Director of Industries, Rajasthan at the rate of 0.5 % of the estimated value of the tender shown in N.I.T.
- CLAUSE :-**
- i. Micro and Small Enterprises which have obtained an acknowledgement of EM-II/Udhyog Aadhar from the concerned District Industries Centre, shall make payment of earnest money @ 0.5% (Half Percent) of the value of the quantity offered for supply by them in respect of item(s) for which acknowledgement of EM-II/Udhyog Aadhar has been issued to them.
 - ii. Such Enterprises shall be required to pay security deposit @1% of the value of stores ordered to be supplied on furnishing of an attested copy of acknowledgement of EM-II/Udhyog Aadhar with an affidavit of Rs. 50/- non judicial stamp by enterprise in prescribed format. {vide FD Circular No. 24/2010 dated 19.10.210}
- 29.4 The Central Government and Government of Rajasthan under taking need not furnish any amount of earnest money.
- 29.5 The earnest money/security deposit lying with the department/office in respect of other tenders awaiting approval or rejected or on account of contracts being completed will not be adjusted towards Earnest Money/Security Money for the fresh tenderer. The earnest money may however, be taken into consideration in case tenders are re-invited.

Signature of tenderer with seal

30. **FORFEITURE OF EARNEST MONEY** : the Earnest Money will be forfeited in the following cases :
- i. When tenderer withdrawls or modifies the offer after opening of tender but before acceptance of tender.
 - ii. When tenderer does not execute the agreement, any other formality require by Department, if any, prescribed within the specified time.
 - iii. When tenderer does not deposit the security Money after the supply order is given.
 - iv. When he fails to commence the supply of the items as per supply order within the time prescribed.
 - v. If the bidder breaches any provision of code of integrity prescribed for bidders specified in the Act and chapter VI of RTPP rules 2013.

AGREEMENT AND SECURITY DEPOSIT (Performance Security) :-

- 31.1 i. Successful tenderer will have to execute an agreement in the **Form 17** (on non-judicial Stamp Paper of the value @ 0.25% of the purchase order amount (Minimum Rs 500/- and maximum Rs 25000/-) within a period of 15 days of issue of order and deposit security equal to 5% of the value of the stores for which tenders are accepted within 15 days from the date of dispatch on which the acceptance of the tender is communicated to him.
- ii. No interest will be paid by the department **on** the security money.
 - iii. The Earnest Money deposited at the time of tender will be adjusted towards security amount. The security money amount shall in no case be less than the earnest money.
 - iv. Performance security shall be furnished in any one of the following forms-
 - (a) deposit through **eGRAS**.
 - (b) Bank Draft or Banker's Cheque of a scheduled bank.
 - (c) National Savings Certificates and any other script/instrument under National Savings Schemes for promotion of small savings issued by a Post Office in Rajasthan, if the same can be pledged under the relevant rules. They shall be accepted at their surrender value at the time of bid and formally transferred in the name of procuring entity with the approval of Head Post Master.
 - (d) Fixed Deposit Receipt (FDR) of a scheduled bank. It shall be in the name of procuring entity on account of bidder and discharged by the bidder in advance. The procuring entity shall ensure before accepting the Fixed Deposit Receipt that the bidder furnishes an undertaking from the bank to make payment/premature payment of the Fixed Deposit Receipt on demand to the procuring entity without requirement of consent of the bidder concerned. In the event of forfeiture of the performance security, the Fixed Deposit shall be forfeited along with interest earned on such Fixed Deposit.

Signature of tenderer with seal

- (e) Any other instrument as mentioned in Rajasthan Transparency in Public Procurement Rules 2013.
- v. Performance security furnished in the form specified in clause (b) to (e) of sub-rule {31.1(iv)} shall remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the bidder, including warranty obligations and maintenance and defect liability period.
- 31.2 i. Firms register with the Director of Industries, Rajasthan in respect of stores for which they are registered subject to their furnishing the registration certificate to original form the Director of Industries or a Photo Copy or a copy their of duly attested by any gazette officer will be partially exempted from earnest money and shall pay deposit @ 1% of the estimated value of tender.
- ii. Central govt. & Govt. of Rajasthan under taking will exempted from furnishing security amount.
- 31.3 FORFEITURE OF SECURITY DEPOSIT:** Security amount in full or part may be forfeited in the following cases :
- a. When any Terms and conditions of the contract is breached.
- b. When the Tenderers fails to make complete supply satisfactorily.
- c. Notice of reasonable time will be given in case of forfeiture of security deposit. The decision of the purchase officer in this regard shall be final.
- 31.4 The expenses of completing and stamping the agreement shall be paid by the tenderer and the department shall be : furnished free of charge with one executed stamped counter part of the agreement.
32. i. All goods must be sent freight paid through rail or goods transport. If goods are sent freight to pay, the freight together with Departmental charge 5% of the freight will be recovered form the suppliers bills.
- ii. R.R. should be sent under registered cover through bank only.
- iii. In case supply is desired to be sent by the purchase officer by passenger train. the entire railway freight will be borne by the department.
- iv. Remittance charges on payment made shall be borne by the tenderer.

33. INSURANCE

- i. The goods will be delivered at the destination godown in prefect condition. The supplier, if he so desired may be insure the valuable goods against lost by theft destruction or damage by fire, flood under exposure to whether or otherwise viz. (war rebellion, roit etc.) The insurance charges will be borne by the supplier and state will not be required to pay such charges, if incurred.
- ii. The articles may also be got insured at the cost of the purchaser if so desired by the purchaser. In such cases, the insurance should invariably be with life Insurance Corporation of India or its subsidiaries.

Signature of tenderer with seal

34. PAYMENTS :

- i. Advance payment will not be made except in rare and special case. In case of advance payment being made it will be against proof of dispatch and to the extent as prescribed in financial power by rail/reputed goods transports companies etc. and prior inspection, if any. The balance in any will be paid on receipt of the consignment in good condition with the certificate to that effect endorsed on the inspection note given to the tenderer.
 - ii. Unless otherwise agreed between the parties payment for the delivery of the stores will be made on submission of bill in the proper form by the tenderer to the purchase officer in accordance with G.F. & A.R. all remittance charges will be borne by the tenderer.
 - iii. In case of disputed items. 10 to 25% of the amount shall be with held and will be paid on settlement of the dispute.
 - iv. Payment in case of these goods, which need testing, shall be made only when such tests have been carried out, test results received conforming to the prescribed specifications.
- 35.1 The time specified for delivery in the Tender form shall be deemed to be the essence of the contract are the successful tenderer shall arrange supplies with in the period on receipt of the firm order from the purchase office.
- 35.2
- | | |
|--|--------------|
| a. Delay up to the one fourth period of the prescribed delivery period. | 2.5 % |
| b. Delay exceeding one fourth but not exceeding half of the prescribed period. | 5.0 % |
| c. Delay exceeding half but not exceeding three fourth of the prescribed period. | 7.5 % |
| d. Delay exceeding three fourth of the prescribed period. | 10 % |
- 35.3 Fraction of a day reckoning period of delay in supplies shall be eliminated if it is less than half a day.
- 35.4 The maximum amount of liquidated damages shall be 10%.
- 35.5 If the supplier requires an extension of time in completion of contractual supply on account of occurrence of any hindrance, he shall apply in writing to the authority, which has placed the work-order for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of supply.
- 35.6 Delivery period may be extended with or without liquidated damages if the delay in the supply of goods is on account of hindrances beyond the control of the tenderer.
- 36. RECOVERIES :**
- Recoveries of liquidated damages short supply breakage, rejected articles shall ordinary be made from bills. Amount may also be with held to the extent of short supply breakages, rejected articles and in case of failure in satisfactory replacement by the supplier along with amount of liquidated damages shall be recovered from his dues and the security deposit available with the department. In case recovery is not possible recourse will be taken under Rajasthan PDR Act. or any other law in force.
37. Tenderers must make their **own** arrangement to obtain import license if necessary.

Signature of tenderer with seal

38. If a tenderer imposes conditions which are in addition to or in conflict with the conditions mentioned in his tender is liable to summary rejection. In any case none of such conditions will be deemed to have been accepted unless specifically mentioned in the letter of acceptance of tender issued by the purchase officer.
39. The purchase officer reserves the right to accept any tender not necessarily the lowest, reject any tender without assigning any reasons and accept tender for all or any one or more of the articles for which tenderer has been given or distribute items of stores to more than one firm/supplier.
40. The tenderer shall furnish the following documents at the time of execution of agreement.
 - i. Attested copy of Partnership Deed in case of partnership firms.
 - ii. Registration No and Year of registration in case partnership firm is registered with register of firms.
 - iii. Address of residence and office telephone number in case of sale proprietorship.
 - iv. Registration issued by Registrar of companies in case of company.
41. If any dispute arise out of the contract with regard to the interpretation, meaning and breach of the term of the contract, the matter shall be referred to by the parties to the Head of the Department who will appoint his senior most deputy as the sole arbitrator of the dispute who will not be related to this contract and whose decision shall be final.
42. All legal proceedings, if necessary arise to the institute may by any of the parties (Government or contractor) shall have to be lodged in courts situated in Jodhpur, Rajasthan and not elsewhere.

DIRECTOR (EDUCATION)
TECHNICAL EDUCATION RAJASTHAN
JODHPUR

I/We have carefully read and understood above terms and conditions (from 1 to 42) of the tender and abide by them.

I/We have also certify that all the information and catalogue etc. of the tendered item has been enclosed and no information has been held back by us.

SIGNATURE OF THE TENDERER
With seal and designation

COMPLIANCE WITH THE CODE OF INTEGRITY AND NO CONFLICT OF INTEREST

Any person participating in a procurement process shall –

- a) not offer any bribe reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process.
- b) not misrepresent or omit that mislead or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation.
- c) not indulge in any collusion, Bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process.
- d) not misuse any information shared between the procuring entity and the Bidders with an intent to gain unfair advantage in the Procurement process.
- e) not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the Procurement process.
- f) not obstruct any investigation or audit of a Procurement process.
- g) disclose conflict of interest, if any and
- h) disclose any previous transgressions with any Entity in india or any other country during the last three years or any debarment by any other procuring entity.

CONFLICT OF INTEREST :

The Bidder participating in a bidding process must not have a conflict interest.

A conflict of interest is considered to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliances with applicable laws and regulations.

A Bidder may be considered to be in conflict of interest with one or more parties in a bidding process if, including but limited to :

- a) have controlling partners/shareholders in common; or
- b) receive or have received any direct or indirect subsidy from any of them; or
- c) have the same legal representative for purposes of the Bid; or
- d) have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder or influence the decision of the Procuring Entity regarding the Bidding process; or
- e) the Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the bidder is involved. however, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one Bid; or
- f) the Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, Works or Services that are the subject of the Bid; or
- g) Bidder or any of its affiliates has been hired (or to proposed to be hired) by the Procuring Entity as engineer-in charge/consultant for the contract

Signature of tenderer with seal

**DECLARATION BY THE BIDDER REGARDING QUALIFICATIONS DECLARATION
BY THE BIDDER**

In relation to my/our Bid submitted to for procurement of in response to their notice inviting Bid No. Dated I/We hereby declare under Section 7 of Rajasthan Transparency in Public Procurement Act, 2012, that;

01. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;
02. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Documents;
03. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;
04. I/we do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to entire to a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;
05. I/we do not have conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

Date :

Signature of Bidder with seal

Place :

Name :

Designation :

Address :

GRIEVANCE REDRESSAL DURING PROCUREMENT PROCESS

The Designation and address of the First Appellate Authority is **Director (Education), Directorate of Technical Education Rajasthan, Jodhpur.**

The Designation and address of the Second Appellate Authority is **Secretary, Technical Education Rajasthan, Jaipur.**

01. Filing an appeal

If a Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provision to the provision of the Act or the Rules or the Guidelines issued there under, he may file an appeal to first Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved.

Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings.

Provided further that in case a procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filled only by a Bidder whose Technical Bid is found to be acceptable.

02. The officer to whom an appeal is filled under para (1) shall deal with the appeal as expeditiously as possible and shall Endeavour to dispose it of within thirty days from the date of the appeal.

03. If the officer designation under para (1) fails to dispose the appeal filed within the period specified in para (2), or if the Bidder or prospective bidder or the Procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the Procuring Entity, as the case may be, may file a second appeal to Second Appellate Authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (2) or of the date of receipt of the order passed by the First Appellate Authority, as the case may be.

04. Appeal not to lie in certain cases

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely :

- a) determination of need of procurement;
- b) provisions limiting participation of Bidders in the Bid process;
- c) the decision of whether or not to enter into negotiation;
- d) cancellation of a procurement process;
- e) applicability of the provisions of confidentiality.

05. Form of Appeal

- a) An appeal under para (1) or (3) above shall be in the annexed Form along with as many copies as there are respondents in the appeal.

Signature of tenderer with seal

- b) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.
- c) Every appeal may be presented to First Appellate Authority or Second Appellate Authority, as the case may be, in person or through registered post or authorized representative.

06. Fee of filing appeal

- a) Fee for first appeal shall be rupees two thousand five hundred and second appeal shall be rupees ten thousand, which shall be non-refundable.
- b) The fee shall be paid in the form of bank demand draft or banker's cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

07. Procedure for disposal of appeal

- a) The first Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, Shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.
- b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be shall,-
 - (i) here all the parties to appeal present before him; and
 - (ii) peruse or inspect documents, relevant records or copies thereof relating to the matter.
- c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.
- d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.

Signature of tenderer with seal

**MEMORANDUM OF APPEAL UNDER THE RAJASTHAN TRANSPARENCY IN
PUBLIC PROCUREMENT ACT, 2012**

Appeal No. of

Before the(First/Second Appellate Authority)

01. Particulars of appellant :

(i) Name of Appellant :

(ii) Official address, if any :

(iii) Residential address :

02. Name and address of the respondent(s) :

(i)

(ii)

(iii)

03. Number and date of the order appealed against
and name and designation of the officer/authority
who passed the order (enclosed copy), or a
statement of a decision, action or omission of
the Procuring Entity in contravention to the provisions
of the act by which the appellant is aggrieved :

04. If the Appellant proposes to be represented by a
representatives, the name and postal address of
the representative :

05. Number of affidavits and documents enclosed with the appeal :

06. Ground of appeal :

.....
.....
.....

(supported by an affidavit)

07. Prayer

:.....
.....
.....

Place :

Date :

Appellant's Signature

ADDITIONAL CONDITIONS OF CONTRACT

01. Correction of arithmetical errors :

Provided that a Financial Bid is substantially responsive, the Procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis :

- (i) if there is discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.
- (ii) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (iii) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

If the Bidder that submitted the lowest evaluated Bids does not accept the correction of errors, its Bid shall be disqualified and its Bid Security shall be forfeited or its Bid Securing Declaration shall be executed.

02. Procuring Entity's Right to Vary Quantities :

- (i) At the time of award of contract, the quantity of goods, works or services originally specified in the Bidding Document may be increased or decreased by a specified percentage, but such increase or decrease shall not exceed twenty percent, of the quantity specified in the Bidding Document. it shall be without any change in the unit prices or other terms and conditions of contract.
- (ii) If the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Conditions of Contract.
- (iii) In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 50% of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply, if the suppliers fails to do so, the Procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the Suppliers.

03. Dividing quantities among more than one Bidder at the time of award (In case of Procurement of Goods) :

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, when it is considered that the quantity of the subject matter of procurement to be procured is very large and it may not be in the capacity of the Bidder, whose Bid is accepted, to deliver the entire quantity or when it is considered that the subject matter of procurement to be procured is of critical and vital nature, in such cases, the quantity may be divided between the Bidder, whose Bid is accepted and the second lowest Bidder or even more Bidders in that order, in a fair, transparent and equitable manner at the rates of the Bidder, whose Bid is accepted.

Signature of tenderer with seal

"DECLARATION BY THE TENDERERS" (S.R. 11)

I / We declare that I am / We are bonafide
/Manufacturer/Whole Sellers/ Sole Distributors/ Authorised Dealer/ Dealers/ Sole Selling/
Marketing Agent in the Good/Stores/Equipments/Furniture's for which I/We have Tendered.
(STRIKE OFF WHICHEVER IS NOT APPLICABLE)

If, this Declaration is found to be incorrect then without prejudice to any other action that
may be taken, my/our security may be forfeited in full and the Tender if any to the extent accepted
may be cancelled.

SIGNATURE OF THE TENDERER
With seal and designation

"G.S.T. DECLARATION"

I, Certify that the goods on which **G.S.T.** has been charged have not been exempted under the **G.S.T. Act**, or the Rules made there under and the amount charged on account of **G.S.T.** is not more than what is payable under the relevant provisions of the **G.S.T. Act** or the Rules made there under.

Certify that we M/s
..... are registered as Manufacturer/Dealer in the
..... (State or Union Territory) under **G.S.T.** Registration No.
.....

SIGNATURE OF THE TENDERER
With seal and designation

PRICE CHARGING CERTIFICATE

I/We hereby certify that the rate offered in Financial bid are reasonable and justified and we are not marketing lower rates to other department on condition of the tender and contract.

SIGNATURE OF THE BIDDER
WITH SEAL AND DESIGNATION

FORMAT OF AFFIDAVIT

(On non-judicial Stamp Paper of Rs- 50/- vide FD Circular No. 24/2010 dated 19.10.210)

I S/o
Aged Years Residing at
Proprietor/Partner/Director of M/s do
hereby solemnly affirm and declare that :

- a) My/Our above noted enterprise M/s has
been issued acknowledgement of Entrepreneurial memorandum Part-II by the District
Industries Centre The acknowledgement No is Dated
and has been issued for manufacturer of following items :
- (i)
 - (ii)
 - (iii)
 - (iv)
 - (v)
- b) My/Our above noted acknowledgement of Entrepreneurial memorandum Part-II has not
been cancelled or withdrawn by the Industries Department and that the enterprise is
regularly manufacturing the above items.
- c) My/Our enterprise is having all the requisite plant and machinery and is fully equipped to
manufacture the above noted items.

Place :

Signature of Proprietor/ Director
Authorised Signatory with Rubber Stamp & Date

(ATTESTED BY FIRST CLASS MAGISTRATE OR NOTARY PUBLIC)

**REAL TIME GROSS SETTLEMENT (RTGS) / NATIONAL ELECTRONIC FUND
TRANSFER (NEFT)**

From: M/s.
.....
.....

To,

The Director (Education),
Directorate of Technical Education Rajasthan,
Jodhpur.

Sub:- RTGS / NEFT Payments.

We refer to remittance of our payments using RBI's RTGS/NEFT. Our payments may be made through the above system to our under noted account at our cost :-

Name of Firm	:	
Full Address	:	
Mobile Number	:	
mail ID for Payment Information	:	
PAN Number	:	
Bankers Name	:	
Branch Name	:	
9 Digit Code of Bank (Appearing on the MICR Cheque issued by the Bank	:	
Account Type with Code	:	
Account Number (as appearing on Cheque Book)	:	
IFSC Code for RTGS	:	

Signature of Bidder
with Stamp & Address

FORMAT OF AFFIDAVIT

(On Non-judicial Stamp Paper of Rs. 50/-)

I.....S/o.....Aged.....
years, residing at Proprietors/Partner/Director
of M/s.....do hereby
solemnly declare that:

- a. all items tendered by me/us in NIT No...../2017-18 issued by Director(Edu.), Directorate of Technical Education, Jodhpur are included in Entrepreneurial Memorandum part-II/Udhyog Aadhar issued to our firm by the Industries Department of Rajasthan.
- b. the rebate in tender fee & earnest money is applicable to our firm as per rules made for SSI units.
- c. if any discrepancy is found later our tender will be liable for rejection including forfeiture of earnest money/security money deposit along with any legal action as per the tender terms & conditions.

Place :

Signature of Proprietor/ Director
Authorized Signatory with Rubber Stamp & Date

Authorisation certificate to be submitted by Principal manufacturer

It is certified that M/s..... (Name & address of tenderer) is our authorised Distributer/ Dealer. They are authorised to submit tender for (Name of item) to Director (Training), Directorate of Technical Education, Jodhpur (Rajasthan) against their Tender Notice No..... Dated-on behalf of us.

The equipment/ Instrument/Machine is guaranteed for the period as mentioned in tender and during the guarantee period the authorised Distributer/Dealer shall replace the parts or rectify any manufacturing defect found in the machine. They are also responsible for after Sale-service during the life time of equipment/instrument/machine. In case of change of authorised Distributer/ Dealer the new authorised Distributer/Dealer will be responsible for guarantee and after sale-service. In case of failure we will be responsible for providing after sale service.

**Signature of Principal Manufacturer
with rubber stamp**

Note:- This authorisation certificate should be typed & signed by the principal manufacturer on his original letter pad and scanned copy of which must be up loaded with tender otherwise concerned item of the tender will not be considered for technical evaluation.

CHECK LIST

List of required Schedules/documents to be submitted online duly signed/ digitally Signed by Authorized Signatory

S. No.	Particulars as per specification	Description of required document	Details of documents to be uploaded by bidder along with relevant page Nos.
(i) COVER – I : Details of Tender Fee/Bid Security/Tender Processing Fee etc. (.pdf)			
01	Cost of Tender Document	Proof of depositing cost of tender specification documents (DD/ Banker's Cheque).	
02	Details of Bid security (EMD)/ Registration/ exemption certificate (EM-II)	Proof of depositing Bid Security (DD/Banker's Cheque/vendor Registration certificate / copy of EM-II with annexure H & affidavit	
03	Tender processing fee	Proof of depositing DD/ Banker's Cheque towards e- tender processing fee.	
04	Authorization of Digital Signature (if applicable)	Power of Attorney for authorized signatory to sign the tender document digitally	
05	G.S.T. Declaration (Annexure-F)	Yes/No	
06	VAT Registration Certificate	Yes/No	
07	Copy of PAN Card	Yes/No	
08	Bid document form duly signed & sealed	Yes/No	
09	Special conditions of tender	Yes/No	
10	Tender form SR-16	Yes/No	
11	Declaration regarding Bonafide dealer SR-11 (annexure-E)	Yes/No	
12	Annexure A, B, C, D,G,J	Yes/No	
13	Technical specifications in annexure-H	Yes/No	
14	Annual Turnover certificate from Chartered Accountant.	Yes/No	
15	Annexure - I&K for SSI Unit (if applicable)	Yes/No	
16	Authorisation of manufacturer (Annexure-L) (if applicable)	Yes/No	
(iii) COVER – II : Financial/Price Bid/BOQ (.xls)			
01	Price bid/BOQ	Details of Price quoted of the material offered in Price bid/ BOQ	

Signature of tenderer with seal

Signature of Tenderer

TECHNICAL SPECIFICATION

- 01. The scanned copy of this annexure (original downloaded) duly completed and seal signed by the bidder must be uploaded otherwise bid should not be considered. Any supplementary information may be uploaded separately.**
- 02. The samples where-ever mentioned in specifications must be submitted in this Directorate along with physical submission of DD's of EMD etc, otherwise concerned item will not be considered for technical evaluation.**
- 03. Scanned Copies of Original Literature/Leaflets/Catalogue etc. must be enclosed in support of your Make and Specifications otherwise concerned items will not be considered for Technical Evaluation.**
- 04. The delivery period will be 50 Days.**
- 05. The Material will be Supplied F.O.R. at Principal Government Polytechnic College, as per order List.**
- 06. Authorization Certificate of manufacturer where-ever mentioned in specifications must be submitted in prescribed format (Annexure-L) otherwise concerned item will not be considered for Technical Evaluation.**
- 07. All the required literature/ leaflets/Catalogues, authorization certificates must be submitted with the tender.**
For the all Items.
- 08. All the material supplied should be new and no item can be supplied which is refurbished.**

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
1	Display board on different switches Push to 'ON', Push to 'OFF', slide, Key board, DIP switch, Leaf switch, SPST Toggle, Rocker Rotary, Thumb wheel with complete theory and description.	2	0	0	2	
2	Display Board on different Transistors Small signal audio amplifier, LF/RF amplifier High frequency, Switching power General-Purpose All above are PNP & NPN both type, Matched pair, Darlington Pair, High Voltage, Photo transistor, UJT, FET and MOSFET. with complete theory and description.	2	0	0	2	
3	AC milli-Voltmeter 0-300V (Laboratory type) Voltage ranges:0-3mV,10mV,30mV,100mV,300mV,1V,3V,10V, 30V, 100V, 300V (total 11 ranges)as per IS Standard Specification.	1	0	0	1	
4	Absorption Wave meter 100KHz -60MHz (Laboratory type) in six ranges. Calibration accuracy $\pm 2\%$ with 9V battery with necessary attachments as per IS Standard Specification.	2	0	0	2	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
5	Complete experimental panel for thyristorised speed control of 3- ϕ induction motor as per IS Standard Specification with suitable ranges of ammeters and voltmeters on the panel. The panel should have suitable protection for the thyristorised controller and a 3KW, 415 V, 1500 RPM 3- ϕ induction motor .Company must be ISO 9001 registered company	1	0	0	1	
6	<p>Trainer for Speed control of dc motor using single-phase dual converter.Company must be ISO 9001 registered company.</p> <p>The trainer should have following features:</p> <p>A. SINGLE PHASE DUAL CONVERTER FIRING CIRCUIT having 8 nos. Isolated gate pulses for ‘p’ group and ‘N’ group SCR converter. One DPDT switch is provided for selection of Dual converter with circulating current mode and without circulating current mode and potentiometers to vary the Firing angle in circulating current mode and without circulating current mode.</p> <p>B. SINGLE PHASE DUAL CONVERTER POWER CIRCUIT , All ‘A’, ‘K’ terminals are terminated in front panel for patching, 25 pin shielded cable for pulse input, 2 nos. of 230/24V, 3A step down</p>	1	0	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	<p>transformer for power circuit input AC voltage C. 0.5 HP DC SHUNT MOTOR : as per experiment required D. 0.5 KVA ISOLATION TRANSFORMER: as per experiment required E. Necessary test points. 230V AC, 50 Hz input, fuse provided for over load protection with ON/OFF switch control and LED indicator F. Manual with practical Diagram and Procedure and Patch cords G. All should be mounted in a powder coated cabinet with stickered front panel with mimic diagram indication</p>					
7	<p>Trainer for Study of speed control of DC Shunt Motor using SINGLE PHASE SEMI CONTROLLED BRIDGE CONVERTER. Company must be ISO 9001 registered company. 0 The trainer should be designed for high voltage operation. It should consists of firing module, SCR power circuit and high voltage accessories with suitable R, R-L Load and freewheeling diode. For the firing circuit Line synchronized op-amp based linear triggering circuit. One no. potentiometer used to vary the triggering angle (0° -</p>	1	0	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	<p>180°d), 1:1 Pulse transformer for gate pulse isolation. For SCR POWER CIRCUIT Power circuit should consists of two no. SCR rated at not less than 600V, 10A, Two No's power diode of same rating. All terminals SCR and Diode should terminate on the front panel for external connections and also for controlling the speed of 1 HP DC shunt Motor.It should have 230V AC, 50 Hz input, fuse provided for over load protection with ON/OFF switch control and LED indicator. The trainer's all components should be mounted on a screen printed PCB fixed on a wooden cabinet.Manual with practical Diagram and Procedure should be provided.</p>					
8	<p>Trainer for study of speed control of DC Shunt Motor using SINGLE PHASE FULL CONTROLLED BRIDGE CONVERTER.Company must be ISO 9001 registered company The trainer should be designed for high voltage operation and must consists of firing module, SCR power circuit and high voltage accessories with suitable R, R-L Load and freewheeling diode. For the firing circuit it should have Line synchronized op-amp based</p>	1	0	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	<p>linear triggering circuit. One no. potentiometer used to vary the triggering angle (0° - 180°d). 1:1 Pulse transformer used for gate pulse isolation. For SCR POWER CIRCUIT it should have Power circuit consisting of four no. SCR rated at not less than 600V, 10A. All terminals of SCR should terminate on the front panel for external connections and for controlling the speed of 1 HP DC shunt Motor it should have 1 Hp dc Shunt Motor armature voltage 220v DC field voltage, 230V AC, 50 Hz input, fuse provided for over load protection with ON/OFF switch control and LED indicator.</p> <p>The trainer's all components should be mounted on a screen printed PCB fixed on a wooden cabinet. Manual with practical Diagram and Procedure.</p>					
9	<p>Digital Logic Trainer To study Basic Logic Gates & verification of Boolean expressions (Half & Full Adder , Half & Full Subtractor, Truth Table Of Flip Flops) for a given logic circuit. The Company must be ISO 9001 registered company. The Trainer should involve Karnaugh's reduction techniques, combinational logic designs & application circuits. The front panel of this instrument should be well layed out with the representation of respective Boolean symbols for</p>	1	0	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	<p>easy identification of Logic gates. The input & outputs of each logic circuit are terminated with Phospor Bronze springs for making multiple connections at any single spring terminal. The Trainer must be housed in an elegant 20& ergonomically designed cabinet with necessary power supplies, input / output facilities, signal sources. The specifications are:</p> <p>Gates:</p> <ul style="list-style-type: none"> • 2 Input AND Gate – 4Nos • 2 Input OR Gate – 4 Nos. • NOT Gate – 6 Nos. • 2 Input NAND Gate – 4 Nos. • 2 Input EX-OR Gate – 4 Nos. • 2 Input NOR Gate – 4 Nos • JK-RS D,T Flip Flop – 4Nos <p>Inputs:</p> <ul style="list-style-type: none"> • Logic Switch Inputs – 6 Nos. • De-Bounced Pulser input – 1 No • Free running TTL clock generator in Two ranges <p>Outputs:</p>					

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	<ul style="list-style-type: none"> • TTL Compatible Lamp indicators – 6 Nos. • Independent 7 segment displays with decoders – 2 Nos. • Power supply • Built-In power supply 5V DC @ 1A 					
10	<p>Trainer to Control speed of a 3- phase induction motor in variable stator voltage mode using 3- phase AC Voltage regulator. Company must be ISO 9001 registered company.</p> <p>The trainer should consists of 3 Phase AC voltage regulator with firing circuit and power devices suitable for speed control of 3 phase induction motor. Digital panel meter of high accuracy as per experiments required to measure various voltages and currents individually and simultaneous with proper range</p> <p>3 phase 415 V AC, 50 Hz input, fuse provided for over load protection with ON/OFF switch control and LED indicator</p> <p>1 HP 3 phase induction motor and loading arrangement with inbuilt speed indicator per experiment requirement</p> <p>3 phase autotransformer 8 amp</p> <p>Manual with practical Diagram and</p>	1	0	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	Procedure and Patch cords All are mounted in a powder coated cabinet with stickered front panel with mimic diagram indication					
11	40 MHz Analog Oscilloscope two channel 4 trace with PC interface Operating Modes: Channel 1, Channel 2, Channel 1 & 2 alternate or chopped (approx.350KHz), X-Y (Ratio 1:1 Input via CH 2), Add/ Sub CH 1± CH 2, Invert CH 2 Vertical deflection (Y) : (Identical channels) Bandwidth: DC-30 MHz (-3dB) DC-40 MHz (-6dB) Rise Time: 12 ns (approx.). Deflection coefficients: Micro-controller based 12 calibrated steps 5mV/Div - 20V/Div (1-2-5 sequence). Electronic Control Display on 80 character backlit Alphanumeric LCD. Accuracy: ± 3%	0	5	0	5	

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	<p>Input Impedance: 1MΩ 30pF (approx.) Input coupling: DC-AC-Gnd Maximum Input voltage: 350V (DC + Peak AC). Time Base: Time coefficients: Micro-controller based 18 calibrated steps, 0.5 μs/Div- 0.2 s/Div (1-2-5 sequence) with magnifier X10 to 50 ns/Div, with variable control to 20 ns/Div. Electronic Control Display on 80 character backlit Alphanumeric LCD. With ALT selection (in X- menu), magnified sweep and normal sweep can be seen simultaneously. When Auto Time Base key is pressed, the TB range is selected automatically depending upon the input signal frequency Accuracy: $\pm 3\%$ (in Cal position). Hold off : Variable control for Stable Triggering. Ramp output: 5 V_{pp} (approx.). Trigger System:</p>					

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	<p>Modes: Auto / Level Source: CH 1, CH 2, Alt-CH 1/CH 2, Ext. Slope: Positive or Negative Coupling: AC, Line Trigger Sensitivity: Internal 5mm, External 0.8V (approx.). Trigger Bandwidth: 50 MHz Horizontal Deflection (X): Bandwidth: DC - 2.5 MHz (-3 dB). X-Y mode: Phase Shift < 3° at 60 KHz Deflection Coefficients: Micro-controller based 12 calibrated steps 5mV/Div- 20V/Div (1-2-5 sequence). Electronic Control Display on 80 character backlit Alphanumeric LCD. Input Impedance: 1MΩ 30pF (approx.) Single Touch Component Tester: Test Voltage: Max 8.6 V_{rms} (Open Circuited) Test Current: Max 8 mA_{rms} (Short Circuited) Test Frequency: 50Hz, Test circuit grounded to chassis. Continuity Tester: Beeper sounds < 75Ω (approx).</p>					

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	<p>General Information Cathode Ray Tube : 140 mm Rectangular tube with internal graticule. P31 Phosphor Accelerating potential : 2 KV approx. Display : 8×10 cm Trace rotation : Adjustable on front panel Calibrator : Square Wave Generator 1 KHz approx. 0.2 V ±1 % for probe compensation Stabilized Power Supply : All operating voltages including the EHT Mains Supply : 230 V ±15%, 50 Hz . Manual (hard and soft copy), all necessary cables.</p>					
12	<p>Display board on different types of relays Display Board on Different Types of Relays and their contacts with theory and description. Plug in Relay 12V 2C/O, 12V 3C/O, 24V 2C/O,24V 3C/O. General Purpose Relay 18V 1C/O,18V 2C/O, 24V 1C/O,24V 2C/O. General Purpose Relay 12V 2C/O, 12V 3C/O, PCB Mounted Relay 6V 1C/O, 18V</p>	0	1	0	1	

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	1C/O, 24V 1C/O, PCB Mounted Relay 12V 1C/O, Special Relay 18V 2C/O, Read Relay Dip 5V 1N/O,Power Relay 24V DC 1C/O.					
13	Verification of ohms law, series and parallel circuits trainer with inbuilt required digital meter	0	1	0	1	
14	AC phase controlled (half and full) using SCR	0	1	0	1	
15	<p>Fan regulator using DIAC & TRIAC</p> <p>Power Electronic Training Board has been designed specifically for the study of Fan Regulator Using Diac and Triac. The board is absolutely self contained and requires no other apparatus.</p> <p>Object: To study Fan Regulator Using Diac and Triac.</p> <p>Features: The board consists of the following built-in parts:</p>	0	1	0	1	

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	<p>01. Isolation Transformer 230VA.C., Power 70 watt. 02. Diac. 03. Triac. 04. Potentiometer to control the speed of Motor / Fan. 05. A universal motor of 1/12 H.P. 06. Adequate no. of other Electronic Components. 07. Mains ON/OFF switch, Fuse and Jewel light. * The unit is operative on 230V ±10% at 50Hz A.C. Mains. * Adequate no. of patch cords stackable 4 mm spring loaded plug length ½ metre. * Good Quality, reliable terminal/sockets are provided at appropriate places on panel for connections/ observation of waveforms. * Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures</p>					
16	<p>Lamp dimmer using DIAC & TRIAC trainer FEATURES</p> <ul style="list-style-type: none"> • Built in Power Supply • Easy to operate and understand 	0	1	0	1	

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	<ul style="list-style-type: none"> • On board two firing circuit • Gradual firing angle control up to 180 degree • In-built Power scope circuit • Switch for selection of firing circuit <p style="text-align: center;">TECHNICAL SPECIFICATIONS</p> <p>On board firing circuits : Diac Triac firing circuit UJT firing circuit SCR & TRIAC: 1 SCRs TYN 616, 600V, 16A and TRIAC BT136 Load : Lamp 60W Mains Supply : 220V, 50 Hz Other Accessories: Hard copy manual, line cord, patch cords, etc The following experiments can be performed in this Trainer :</p> <ol style="list-style-type: none"> 1. Study of lamp dimmer using DIAC & TRIAC firing scheme 2. Study of lamp dimmer using UJT firing scheme 					
17	Phase inverter amplifier trainer	0	1	0	1	

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	<p>1. Built in Power Supply. 2. All Component mount on P.C.B. Covered with acrylic sheet, housed in wooden cabinet. 3. A manual having practical detail is provided with the board. 4. Built-in Power supply : +12V at 200mA IC Regulated & short circuit protected 5. Power requirement : 230V, 50Hz AC. 6. Transistor -BC148B - 1 No. in CE amplifier circuit 7. Different Load Resistors 8. Standard Accessories : 1. A manual having practical details. 2. Patch Cords.</p>					
18	<p>SCR series inverter trainer</p> <p style="text-align: center;">FEATURES:</p> <ul style="list-style-type: none"> • Built in power supply • Easy to operate and understand • On board triggering circuit • Sockets to make connections • Gradual variation of frequency • Test points to observe output at different points <p style="text-align: center;">TECHNICAL SPECIFICATIONS</p>	0	1	0	1	

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	<p>Circuit DC supply : +5 V, +12 V On board firing circuits: a. Square wave generator. b. Logic circuit for two get signals output. Frequency variation : Gradually variation using control Pot1 SCR : 2 SCRs 2P4M, 600V, 2A Power Supply : 220 V ±10%, 50 Hz Interconnection : 2 mm socket Other Accessories: Hard copy manual, line cord, patch cords, etc The following experiments can be performed in this Trainer : 1. To study the operation of series inverter</p>					
19	Study of SMPS	0	1	0	1	
20	<p>measurement of speed using magnetic pick-up Transducer(digital) TECHNICAL SPECIFICATIONS: • DC Variable Power Supply to change the speed of the motor and a 5V Fixed for Electromagnetic pick-up.</p>	0	1	0	1	

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	<ul style="list-style-type: none"> • Electromagnetic pick -up fitted near to the slotted disc attached to the motor. • DC Motor fitted with slotted disc having 15 slots to sense the magnetic portion passing through it. • Electronic circuit with 1Hz Clock Pulse, wave shaper (converter), a multiplier and a counter. • 4 Digit Digital Panel Meter for RPM measurement. • Other accessories : Hard copy manual, line cord, Connecting leads 					
21	<p>Temperature Transducer (RTD/ Thermocouple/ Thermister)Trainer</p> <ul style="list-style-type: none"> • Self contained trainers • Each with 4 different transducers • Study of transducers controlled switching/alarm systems • On board signal conditioning circuitry • Built-in DC power supply 	0	1	0	1	

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	<ul style="list-style-type: none"> • Functional blocks indicated on-board mimics • Fully documented student workbook and operating manual with each trainer <p style="text-align: center;">TECHNICAL SPECIFICATIONS</p> <p>Transducers :4 nos.</p> <p style="margin-left: 40px;">a) N.T.C. Thermistor b) Platinum R.T.D. c) Type K. Thermocouple d) IC Temperature sensor</p> <p>Heating Element :Wire wound resistance 47 Ω, 7w</p> <p>Signal conditioning : 1) Instrumentation Amplifier 2) X100 Amplifier 3) DC Amplifier 4) Comparator 5) Electronic Switch</p> <p>Input Circuits :Rotary & Slide potentiometers</p> <p>Output Circuits : 1) Relay</p>					

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	<p style="text-align: center;">2) Buzzer</p> <p>Interconnections :2mm/4mm banana sockets Power supply :220V±10%, 50Hz Other Accessories :Line cord, hard copy Manual, set of patch cords.</p> <p>The Trainer should have made following experiments :</p> <ol style="list-style-type: none"> 1. Characteristics of IC temperature sensor 2. Characteristics of NTC Thermistor 3. Characteristics of NTC bridge circuit 4. Characteristics of Platinum RTD 5. Characteristics of K type Thermocouple 6. Temperature controlled Alarm System 					
22	Use of series multiplier for voltage range extension trainer	0	1	0	1	
23	Use of shunt multiplier for current range extension	0	1	0	1	

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24	<p>Diode & zener diode characteristics trainer</p> <p>FEATURES:</p> <ul style="list-style-type: none"> • A complete system to study the diode characteristics • Forward and reverse characteristics experiment can be performed on this trainer kit • Silicon, Zener and Germanium diode are provided with this system • Inbuilt Ammeter and Voltmeter are provided • Digital display for displaying voltage and current • Different test points are provided <p>TECHNICAL SPECIFICATIONS</p> <p>Silicon, Zener and Germanium diode are provided with this system on board</p> <p>On Board DC power supply : +12V DC</p> <p>Ammeter:-</p> <p>Range : 1μA to 200mA</p>	0	1	0	1	

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	<p>Display : 3½ digit Voltmeter:- Range : 1mV to 200V Display : 3½ digit Mains power : 230V AC ±10% Other Accessories: Hard copy manual, line cord, patch chords, etc The following experiments can be performed in this Trainer :</p> <ol style="list-style-type: none"> 1. Study of V-I characteristics of Silicon Diode 2. Study of V-I characteristics of Zener Diode 3. Study of V-I characteristics of Light Emitting Diode (LED) 					
25	<p>Junction diode rectifier & filter characteristics trainer Experimental training board has been designed specifically for the study of the junction diode rectifier and filter characteristics. Practical experience on this board carries great educative value for science and engineering students. Object: Study of junction diode rectifier & filter characteristics. 01. Study of junction diode rectifier output and ripple content for different resistive loads for : (a) Half wave. (b) Full wave (centre tap). (c) Full wave (bridge). (d) Voltage doubler circuit. 02. Study</p>	0	1	0	1	

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	<p>of filter and load regulation characteristics for half wave and full wave rectifier having different resistive loads and filters of the type (a) Capacitor filter. (b) Capacitor filter with capacitor value doubled. (c) Inductor filter. (d) Capacitor input l&nbsp;section filter. (e) Capacitor input p&nbsp;section filter. Features: The board consists of the following built-in parts : 01. Mains transformer, secondary centre tap 100-0-100v at 100 ma. 02. Dc milliammeter, 65mm rectangular dial to read 0-100 ma. 03. Dc voltmeter, 65mm rectangular dial to read 0-300 v. 04. Four silicon junction diodes. 05. Filter choke. 06. Adequate no. Of other electronic components. 07. Mains on/off switch, fuse and jewel light. The unit is operative on 230v &plusmn;10% at 50hz a. C. Mains. Adequate no. Of patch cords stackable from rear both ends 4mm spring loaded plug length &frac12; metre. Good quality, reliable terminal/sockets are provided at appropriate places on panel for connections/ observation of waveforms. Strongly supported by detailed operating instructions, giving details of object, theory, design procedures, report suggestions and book references.;A. C. Millivoltmeter.</p>					

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26	<p>MOSFET characteristics trainer</p> <p>FEATURES:</p> <p>Instrument comprises of Two DC IC Regulated Power Supplies 0-15VDC/150mA & 0- 3VDC/150mA.</p> <p>Three Square/Digital meters for voltage & current measurement.</p> <p>One MOS FET mounted behind the panel.</p> <p>Instrument Fitted in Highly Shockproof Box.</p> <p>ACCESSORIES:</p> <p>Sufficient no of 2mm/4mm Patch Cords for Interconnection</p> <p>Instruction Manual for Student Workbook.</p> <p>Power Cords 230v, 50Hz</p>	0	1	0	1	
27	<p>Opto electronic devices characteristics trainer</p> <p>Experimental Training Board has been designed specifically to study the characteristics of Opto Electronic Devices. Different experiments have been included in this Opto Electronic Devices characteristics board in order that a wide range of topics on Opto Electronics Devices Characteristics be covered in a short span of time. All the circuits for</p>	0	1	0	1	

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	<p>obtaining the characteristics of various devices can be easily assembled on this versatile training board itself. Practical experience on this board carries great educative value for Science and Engineering Students.</p> <p>Object (To study the characteristics of the following opto electronic devices) :</p> <p>Light Emitting Diode (LED) Photo Diode Photo Transistor Light Dependent Resistor (L.D.R.) Photo Voltaic Cell Opto Coupler</p> <p>Features: Two 0-10V D.C. at 100mA, continuously variable regulated Power Supplies Digital Voltmeter DC 3½ Digit having Dual range of 2V / 20V.</p>					

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	<p>Digital Current meter DC 3½ Digit having Dual range of 2mA / 20mA Digital Current meter DC 3½ Digit having Dual range of 200µA / 20mA</p> <p>Specifications :</p> <p>Opto Electronic Devices : Light Emitting Diode (LED) Photo Diode Photo Transistor Light Dependent Resistance (LDR) Photo Voltaic Cell Opto Coupler</p> <p>Adequate no. of other electronic components : The unit is operative on 230V ±10% at 50Hz A.C. Mains Adequate no. of patch cords stackable from rear both ends 4mm spring loaded plug length ½ metre Good Quality, reliable terminal/sockets are provided at appropriate places</p>					

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	<p>on panel for connections Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References</p> <p>Other Apparatus Required: Variac 0-230V, 50Hz at 2 Amp 40 Watts, table lamp</p>					
28	<p>Study of diode clipping circuit trainer</p> <p style="text-align: center;">FEATURES:</p> <ul style="list-style-type: none"> • Built-in 1KHz Sine Wave Generator • Good quality, reliable sockets and test points are provided • Strongly supported by systematic operating instructions • A low cost training system including many experiments <p style="text-align: center;">TECHNICAL SPECIFICATIONS</p> <p>Mains Supply : 230 V $\pm 10\%$, 50 Hz Sine Wave Generator : 1 KHz, 15V V_{pp} (approx.)</p>	0	2	0	2	

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	<p>DC Power Supply : 0 - 5 V (vary through (2No.) rotary switch for specific voltage level) Other Accessories: Hard copy manual, line cord, patch chords, etc The following experiments can be performed in this Trainer :</p> <ol style="list-style-type: none"> 1 Study of Series Positive Clipper and Series Negative Clipper Circuits 1. Study of Shunt Positive Clipper and Shunt Negative Clipper Circuits 2. Study of Biased Series Positive Clipper and Biased Series Negative Clipper Circuits 3. Study of Biased Shunt Positive Clipper and Biased Shunt Negative Clipper Circuits 4. Study of Combination Clipper Circuit 					
29	<p>Integrating. Differentiating & clamping circuit trainer FEATURES:</p> <ul style="list-style-type: none"> • Built-in 1KHz Sine Wave Generator • Good quality, reliable sockets and test points are provided • Strongly supported by systematic operating instructions <ul style="list-style-type: none"> • A low cost training system including many experiments 	0	2	0	2	

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	<p align="center">TECHNICAL SPECIFICATIONS</p> <p>Mains Supply : 230 V \pm10 %, 50 Hz Sine Wave Generator : 1 KHz, 15V Vpp (approx.) DC Power Supply : 0 - 5 V (vary through (2No.) rotary switch for specific voltage level) Other Accessories: Hard copy manual, line cord, patch chords, etc The following experiments can be performed in this Trainer :</p> <ol style="list-style-type: none"> 1. Study of Positive and Negative Clamper Circuits 2. Study of Biased Clamper Circuits 3. Study of Integrating and Differentiating circuits 					
30	Study of electronic voltmeter (2 digits AC/ DC)	0	1	0	1	
31	Transistor tester Breakdown Voltage V(BR) Measuring range : 1000V, Display 0~1000 Resolution 1V : 200V, Display 0~199.9 Resolution 0.1V Operating condition:Breakdown current less then 1mA	0	1	0	1	

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	<p>Collector Emitter Saturation Voltage Drop VCE(sat) Measuring range:2A (IC), Display 0~6.00, Resolution 0.01 Operating condition :C approx 2000mA : Ib approx 200mA Measuring range:800mA (IC), Display 0~6.00, Resolution 0.01 Operating condition:IC approx 800mA :Ib approx 80mA Measuring range:100mA (IC), Display 0~6.00, Resolution 0.01 Operating condition:IC approx 100mA :Ib approx 10mA Measuring range:10mA (IC), Display 0~6.00, Resolution 0.01 Operating condition :IC approx 10mA : Ib approx 1mA hFE DC Current Measuring range :10mA (IB), Display 0~199.9, Resolution 0.1 Operating condition :IC approx 10mA Measuring range :1mA (IC), Display 0~1999, Resolution 1</p>					

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	Operating condition : Ib approx 1mA Measuring range :10microA (IC), Display 0~1999, Resolution 1 Operating condition :Ib approx 0.01mA Reverse Leakage Current Measuring range :2000microA, Display 0~1999 Resolution 1microA Operating condition :Testing voltage approx 27V 78 & 79 Voltage Regulation Measuring range : 78XX / 79XX, Display 0~24 Resolution 0.1V Operating condition : Testing voltage approx 27V Standard Accessories : Probes, Batteries, Hard copy Instruction manual					
32	Study of seven segment display LED trainer	0	1	0	1	
33	Study of seven segment display LCD trainer	0	1	0	1	

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34	Stethoscope	0	1	0	1	
35	<p>WDM Trainer Optical System should be modular and should contain each module separately as listed in the specifications. The modules should be compatible with the existing equipments available in the lab.</p> <p>Glass Fiber Based Laser Sources- 1310nm Laser Diode Module –1 No. Source : Laser Diode Wavelength : 1300nm Max Output power : 0.9mW Max current : 40mA 1550nm Laser Diode Module –1 No. Source : Laser Diode Wavelength : 1550nm (typ.) Max Output power : 2mW Max current : 30mA Optical output connector: SC receptacle</p>	0	0	2	2	

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	<p>Optical Power Meter -Calibrated wavelength 850/1310/1550nm, Germanium Photo Detector, Optical I/P Power: +3dBm to -60dBm, Accuracy: + 0.2dB, Battery & DC power operation, ST Type Optical Interface</p> <p>Consists with the following separate modules-</p> <p>Laser Diode Modulator - 2 No.-</p> <p>TTL Input Data Rate : 400Kbps to 34Mbps NRZ : 200Kbps to 17Mbps RZ</p> <p>OTDR Pulse Input :70ns ON time (min) for Speed 1.: 120ns ON time (min) for Speed</p> <p>2.Power Supply : + 5V DC</p> <p>Power Supply Connectors : DIN-DIN Connectors</p> <p>Interface Connectors : TTL I/P - BNC</p> <p>5x2 Headers</p> <p>OTDR Pulse - 25 pin D Type</p> <p>Optical Receiver Module –</p> <p>Incident optical wavelength : 1550nm</p> <p>Data output : TTL</p> <p style="text-align: right;">LD Unit -</p>					

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	<p>Modulated optical data input rate : 100Kbps to 34 Mbps for NRZ, 100Kbps to 17 Mbps for RZ</p> <p>Interface connectors</p> <p>Optical Input : ST</p> <p>TTL Output : BNC</p> <p>WDM Coupler Module-1x2 50/125micron</p> <p>Fixed Attenuators - 1310nm & 1550nm- 1 each</p> <p>TTL Generator Module</p> <p>Chromatic Dispersion Module</p> <p>List of Experiments</p> <ul style="list-style-type: none"> -Study of characteristics of laser diodes - Measurement of isolation and insertion loss of WDM coupler -Study of WDM concept - WDM – End to end operation - Study of chromatic dispersion effect <p>List of Items</p> <p>LD Modulator 2No.</p> <p>1310&1550nm LD Unit - 1 No. each</p>					

S.No.	Item Name & Technical Specification	Bharatpur	Bikaner	Jodhpur	Total Qty.	(*) Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	Receiver Modules - 2 No. LD Driver Module- 1No. WDM Coupler Modules- 2No. Fixed Attenuators - 1310nm & 1550nm Modules 1No TTL Generator – 1No. 2.5km SMF Fiber spool 1No. Glass fiber 1 Km for chromatic Dispersion experiment. Hard copy of Manual					
36	Advanced fiber optic lab System should be in modular form. Individual modules should be compatible with each other and characteristics are possible of individual module. Box type is not preferable. LASER DIODE module with Collimating lens to set up for free space communication: Wavelength - 660nm (typ.), Max O/P power - 3mW, Threshold current - 30mA(typ.), Forward Bias, Collimating lens for adjustable spot size. Individual module of LD Modulator: Max data rate – upto 34Mbps for NRZ.	0	0	1	1	

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	<p>Individual module for Optical Receiver: Modulated Optical I/P - 4Mbps for NRZ.</p> <p>APD Module with power supply: Photo detector - Silicon Avalanche Photo Diode, Max Reverse Current - 100 μA, Responsivity at 850 nm (At M=1) - 0.45 μA/μW, Multiplication factor – 100 (typ), ST type optical connector interface.</p> <p>Experimental & Modular OTDR building blocks: consists with individual modules of</p> <ul style="list-style-type: none"> i) Directional Coupler 1x2, 50/125micron – 1No., ii) ii) XY positioner/RAIL, mounting posts for Laser Diode unit with Rail, iii) Laser Diode 660nm visible range with laser modulator separate module & APD module as specified above , iv) Pulse Generator unit and Software – less than 150ns ON time with RS422 interface, v) 1m ST-ST patch cord – 2Nos. VI). Min 500m and individual 					

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	<p>module spools of bare fiber in the length 140,160,200m of MM GF in different lengths in open form with Events to study the OTDR concepts.</p> <p>LED module with Power Supply: LED Peak Wavelength - 880nm, Spectral Bandwidth: 30nm, Max Optical Power Coupled into Plastic Fiber > -20dBm, Forward Bias.</p> <p>PD Module with Power supply : Photo detector - Silicon PIN Diode, Responsivity at 880 nm -0.4 A/W, Reverse Dark Current -60nA, Forward, Reverse & Zero Bias, Leakage characteristics.</p> <p>Digital Link with power supply:</p> <p>Transmitter module: DC Coupled with intensity modulation, Data Rate(TTL) - 2Mbit/sec for NRZ, LED wavelength - 880nm, Max.Optical Power > -20dBm. Receiver module: AC coupled, PIN silicon Photo Diode wavelength - 880 nm, Sensitivity: -35dBm, Link Length - 100m MM Glass Fibre.</p> <p>Optical Power Meter: -1 No.</p> <p>Calibrated wavelength – 660nm/850nm, Optical I/p Power :+3dBm to -60dBm,</p>					

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	<p>Accuracy : + 0.2dB , Battery & DC power operation, Optical Interface for PF(Bare fiber Adapter) & MM GF (ST Type).</p> <p>Optical Power Source:-1No. Optical Source Type – LED, Wavelength - 880nm, Spectral Width - 100nm, Max optical o/p: -20dBm, Output Stability: <0.3dB, Optical Connector - ST type, Attenuation by Coarse & Fine Adjustments. Modulation: i) Continuous Wave (CW), ii) Internal – Programmable bit rates from 64 to 2048 Kbps, PRBS, iii) External Modulation – TTL 0 to 2Mbps. Special PCBs for designing the transmitter and receiver with necessary components and tray- 18 No. (Assembled and unassembled) Optical Fiber Communication Trainer with power supply: - 1 No. Electrical Section: 12 (64Kbits/sec) channels, including one slot for 16-bit Marker, User programmable two 8-bit frame markers in the alternate frame, Manchester Coding / Decoding, Data Rate - 768 Kbits/sec, 1.5 Mbits/sec after Manchester coding, 2 Voice PCM channels, A-law Voice coding.</p>					

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	<p>Optical Section : LED Operating Wavelength - 850nm & 650nm, Detector - Si PIN Photo Diode, FWHM Spectral Width - 100nm, Fiber - 1000micron plastic Fiber(1m & 3m length)</p> <p>Additional Features: Expansion ports, Programmable marker settings, Single & Double marker for False marker study, Latch type data switches for '1' or '0' transmission, Provision for feeding TTL thru' these data switches & Complete functional block diagram showing different stages with test points and BNC ports for all I/O operations should be available.</p> <p>Accessories for the experiments: Microscope, ST-ST 1m patch cord MM GF , ST-ST 1m MM GF Reference patch cord , Loose jacketed MM Glass fibre with fixed mandrel for 500m Length, Mandrels with different diameter for MM GF Bending loss measurement & Clad mode stripping study etc., LD Pointer ST-ST Adapters and Experimental manuals for all above kits should be supplied. Preferably supply discrete sources, detectors, components & PCB's to build optical transmitters and receivers.</p> <p>List Of Experiments- Characteristics of LED and PIN Photo diode</p>					

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	<ul style="list-style-type: none"> • LED characteristics <ul style="list-style-type: none"> • P – I • V – I • PD characteristics <ul style="list-style-type: none"> • Reverse bias (Responsivity, Quantum efficiency) • Forward bias • Zero bias • Leakage characteristics • Characteristics of LASER diode • LASER diode characteristics <ul style="list-style-type: none"> • P – I (knee current) • V – I • Setting up of a LoS (Line of Sight) Link – Free space optical link <ul style="list-style-type: none"> ○ With live data – using OFT ○ Jamming of signal 					

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	<p>Characteristics of APD</p> <ul style="list-style-type: none"> • APD characteristics <ul style="list-style-type: none"> • Reverse bias (multiplying effect) • Zero bias • Leakage characteristics • P-I (Power Vs Load Current) <p>Characteristics of multimode</p> <ul style="list-style-type: none"> • Multimode Plastic fibre <ul style="list-style-type: none"> • Numerical Aperture of Plastic fibre • Attenuation in Plastic fibre • Bending loss in Plastic fibre • Electromagnetic interference • Pulse broadening in FO communication • Multimode glass fibre 					

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	<ul style="list-style-type: none"> • Attenuation in MM glass fibre • Bending loss • Clad mode stripping study <p>Fibre fault analysis using OTDR</p> <ul style="list-style-type: none"> • Building blocks of OTDR - Allows building an OTDR with essential components and study its basic operations. • Study of Optical Fiber events using the constructed OTDR & standard OTDR's available in labs • Fault Finding through Experimental OTDR • Distance Calculation of Fault through Experimental OTDR. <p>Digital Communication concepts used in Serial transmissions</p> <ul style="list-style-type: none"> • Study of 64Kbps transmission concept that is common in serial transmissions like ISDN/E1/T1 systems • Time division multiplexing concept 					

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	<ul style="list-style-type: none"> • Line coding methods (Manchester) • False Marker Generation and the role of ITU (CCITT) standard • PCM Voice coding • Asynchronous data transfer <p>Fibre Optic link design and analysis</p> <ul style="list-style-type: none"> • FO link design – Analog and Digital (Plastic fiber) • FO digital link <ul style="list-style-type: none"> • Multimode Fiber Link – Sensitivity and Power budget • Bit Rate measurement and study of AC coupled Link • FO Analog link <ul style="list-style-type: none"> • System study • Bandwidth <p>List of Items for Advance optical fiber Lab</p> <table border="0"> <tr> <td>Optical Fiber Trainer</td> <td>1no</td> </tr> <tr> <td>(850nm) – Power Source</td> <td>1no</td> </tr> <tr> <td>Power Meter</td> <td>1no</td> </tr> </table>	Optical Fiber Trainer	1no	(850nm) – Power Source	1no	Power Meter	1no					
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(850nm) – Power Source	1no											
Power Meter	1no											

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	<p> 2MHz Plastic fiber Analog Link 1no 2Mbps Multimode Glass Fiber Digital Link 1no Fiber Events 1set LED Module 1no PD Module 1No. LD Modulator 1no LD Module with collimating lens 1no APD Module 1no OTDR Building Block 1set 5Mbps Digital Receiver 1no Loose Jacketed Multimode Glass Fiber 500m Special PCBs – 1set assembled + 5 sets unassembled Hard copy of Manual 1no Accessories: ST-ST patch cords multimode 1m X 2nos ST-ST adaptors 2nos LD pointer 1no Microscope 1no </p>					

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	Mandrels 1set					

Terms & Condition :-

1. F. O. R. Principal, Government Polytechnic College, Bharatpur/Bikaner/Jodhpur.
2. Delivery Period 50 days