EdCIL/PROC/PTU-2017/IT-EQP-1/2

BID DOCUMENT

NATIONAL COMPETITIVE BIDDING

FOR

SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF UNINTERRUPTED POWER SUPPLY (UPS)EQUIPMENTS

FOR

I.K.G.PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA AND ITS OTHER CONSTITUENT CAMPUSES (PUNJAB)

Bid No. : **EdCIL/PROC/PTU-2017/IT-EQP-1/2**

PART-II- FINANCIAL BID

EdCIL (India) Limited
(A Govt. of India Mini Ratna Enterprises)
'EdCIL House', Plot No. 18A, Sector- 16A
NOIDA – 201301 (UP), INDIA
Tel: 0120 – 2512001-006, FAX: 0120-2515372

Dated:09.06.2017
This document serially numbered from page number 01 to 20.

FINANCIAL BID

Instructions to Bidders

1. Financial Bid shall be submitted with full price details.

Financial Bid shall contain only the prices duly filled in as per the format given in Schedule of Rates provided in the tender document. Price bid should not have any Commercial and/or Technical stipulation in addition to, what is already given in Part I – Technical bid.

Financial Bid Standard Forms (Form-1, Form-2A, Form-2B, and Form-2C) shall be used for the preparation of the price quote according to the instructions provided.

2. **The Bidder should quote for all the UPS items / equipments listed in this document. In case, the Bidder/s does not quote for all the UPS items/Equipments, the Bid shall be treated as incomplete and shall be rejected summarily.**

3. The Items / equipments to be supplied / delivered / installed / commissioned at various locations of IKGPTU Campuses are as shown in the enclosed Annexure VI. The rate shall be inclusive of all taxes, octroi, transportation (as per the location), packing, loading and unloading (as designated location), Insurance etc. and nothing shall be paid extra.

4. The bid shall be evaluated on total value of all UPS items/Equipments as shown in summary and supply order shall be placed to a bidder as a composite bid.

5. The prices quoted by the bidder shall be fixed for the quantity mentioned for the duration of the contract and shall not be subject to adjustment on any account. Price should be firm for any positive or negative variation in quantities up to 100%.

6. The changes displayed in the corrigendum/addendum to the bid documents, particularly with the financial bid should be attached with the financial bid submission, in the same packet, duly signed and stamped by the authorized signatory of the Bidder firm.

FINANCIAL BID SUBMISSION FORM

To:

Chief General Manager (EIS & EPS)
EdCIL (India) Limited
EdCIL House, 18 A, Sector-16 A
NOIDA – 201301 (U.P.), India

Dated: ___/___/2017

Dear Sir,

We, the undersigned, offer to provide "SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF UPS EQUIPMENTS" in accordance with your Request for Proposal dated ___/___/2017.

Our attached Financial Bid is for the amount of _____ *[Indicate the corresponding to the amount(s), currency(ies) {Insert amount(s) in words and figures}].*

Please note that all amounts shall be the same as in Form-1. Our Financial Bid shall be binding upon by us subject to the modifications resulting from Contract negotiations, if any, up to expiration of the validity period of the Proposal.

We remain,

Yours sincerely,

Authorized Signature {In full and initials}:
Name and Title of Signatory:
In the capacity of:
Address:
E-mail:

FORM-1

SUMMARY OF FINANCIAL BID

S. No.	Description	Amount (exclusive of Tax) (Rs.)	Tax (Rs.)	Amount (Inclusive of Tax) (Rs.)
A.	UPS 3KVA (Annexure-I)			
B.	UPS 6KVA (Annexure-II)			
C.	UPS 10KVA (Annexure-III)			
	Total (Rs.)			

Total Price Bid (exclusive of taxes) (in Words)

(Rupees……)

Total Price of Bid (Inclusive of taxes) (In Words)

(Rupees……)

Signature of bidder	**……**
Name & Address	**……** **……**
Date	**……**

Note :

i) ***Unit price should include the cost of warranty for one year and freight and other charges such as loading/unloading, storage etc. AMC payment shall be made on quarterly basis.***

ii) ***Discount or any other offers affecting the package price must be mentioned here only and shall not be considered if mentioned at any other place of the bid.***

iii) ***In case of discrepancy between unit price and total price, the unit price shall prevail.***

iv) ***Bids shall be evaluated based on total price without taxes.***

FORM-2 (FINANCIAL BID)

ANNEXURE-I

A. UPS 3KVA

S. No.	Description of Item & Specification (Model No.)	Unit	Qty.	Unit Price (Rs.)	Amount (Exclusive of Tax) (Rs.)	Excise Duty (%) (also indicate amount)	CST/ VAT (%) (also indicate amount)	Octroi (%) (also indicate amount)	Amount (Inclusive of Tax) (Rs.)
			1	2	3 = (1 x 2)	4	5	6	7 = 3+4+5+6
1.	**UPS 3KVA** *(for detailed technical specifications refer ANNEXURE IV-A) including one year warranty*	**No.**	___						
2.	Comprehensive AMC for two years	**No.**	___						
	SUB-TOTAL(Rs.) (Carry forwarded to Summary)								

Sub-Total Price Bid (exclusive of taxes) (in Words)

(Rupees……)

Sub-Total Price of Bid (Inclusive of taxes) (In Words)

(Rupees……)

Signature of bidder	**……**
Name & Address	**……** **……**
Date	**……**

Note :

i) ***Unit price should include the cost of warranty for one year and freight and other charges such as loading/unloading, storage etc. AMC payment shall be made on quarterly basis.***

ii) ***Discount or any other offers affecting the package price must be mentioned here only and shall not be considered if mentioned at any other place of the bid.***

iii) ***In case of discrepancy between unit price and total price, the unit price shall prevail.***

iv) ***Bids shall be evaluated based on total price without taxes.***

FORM-2 (FINANCIAL BID)

ANNEXURE-II

B. UPS 6KVA

S. No.	Description of Item & Specification (Model No.)	Unit	Qty.	Unit Price (Rs.)	Amount (Exclusive of Tax) (Rs.)	Excise Duty (%) (also indicate amount)	CST/ VAT (%) (also indicate amount)	Octroi (%) (also indicate amount)	Amount (Inclusive of Tax) (Rs.)
			1	2	3 = (1 x 2)	4	5	6	7= 3+4+5+6
1.	**UPS 6KVA** *(For detailed technical specification refer ANNEXURE IV-B) including one year warranty*	**No.**	120						
2.	Comprehensive AMC for two years	**No.**	120						
				SUB-TOTAL(Rs.) (Carry forwarded to Summary)					

Sub-Total Price Bid (exclusive of taxes) (in Words)

(Rupees……)

Sub-Total Price of Bid (Inclusive of taxes) (In Words)

(Rupees……...)

Signature of bidder	……
Name & Address	…… ……
Note : **Date**	……

i)	***Unit price should include the cost of warranty for one year and freight and other charges such as loading/unloading, storage etc. AMC payment shall be made on quarterly basis.***
ii)	***Discount or any other offers affecting the package price must be mentioned here only and shall not be considered if mentioned at any other place of the bid.***
iii)	***In case of discrepancy between unit price and total price, the unit price shall prevail.***
iv)	***Bids shall be evaluated based on total price without taxes.***

FORM -2 (FINANCIAL BID)

ANNEXURE-III

C. UPS 10KVA

S. No.	Description of Item & Specification (Model No.)	Unit	Qty.	Unit Price (Rs.)	Amount (Exclusive of Tax) (Rs.)	Excise Duty (%) (also indicate amount)	CST/ VAT (%) (also indicate amount)	Octroi (%) (also indicate amount)	Amount (Inclusive of Tax) (Rs.)
			1	2	3 = (1 x 2)	4	5	6	7 = 3+4+5+6
1.	**UPS 10KVA** *(for detailed technical specification refer ANNEXURE IV-C) including one year warranty*	**No.**	__						
	Comprehensive AMC for two years	**No.**	__						
				SUB-TOTAL(Rs.) (Carry forwarded to Summary)					

Sub-Total Price Bid (exclusive of taxes) (in Words)
(Rupees……)

Sub-Total Price of Bid (Inclusive of taxes) (In Words)
(Rupees……)

Signature of bidder	……
Name & Address	…… ……
Date	……

Note:

i) ***Unit price should include the cost of warranty for one year and freight and other charges such as loading/unloading, storage etc. AMC payment shall be made on quarterly basis.***

ii) ***Discount or any other offers affecting the package price must be mentioned here only and shall not be considered if mentioned at any other place of the bid.***

iii) ***In case of discrepancy between unit price and total price, the unit price shall prevail.***

iv) ***Bids shall be evaluated based on total price without taxes.***

DETAILED TECHNICAL SPECIFICATIONS:

DETAILED TECHNICAL SPECIFICATIONS:

ANNEXURE-IV

A. 3 KVA Online UPS:

S.No.	Description	Specification
1	Capacity	3 KVA
2	Technology	Digital signal processor controlled True Online, High Frequency
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation
4	Noise Level	Less than 50 dB
5	Operating Temperature	0-45 degree centigrade
6	Humidity	10 to 95% no-condensing
7	Harmonic Distortion	<2% (linear load), <3% (non-linear load)
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)
9	Crest Factor	Minimum 3:1 at full load
10	Output Wave Form	Pure Sine wave
11	Cold Start feature	Required
	INPUT	
12	Input	Single phase 3 wire
13	Input Voltage Range	1 phase 230VAC+ Neutral +earth
14	Input Frequency Range	46-54Hz
15	Power Factor	>0.9
	OUTPUT	
16	Output Voltage	220/230 VAC programmable1 phase + N
17	Output Frequency	50hz +/- 0.1% (Free running)
	EFFICIENCY	
18	AC to AC	93%
19	DC to AC	94%
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break
21	LOAD POWER FACTOR	0.9% lag to unity
22	OVERLOAD CAPACITY	150 % for 30 Sec,110% for 1mts
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short

	ISOLATION	
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch
25	Isolation Transformer	At input
26	Galvanic Isolation	Required
27	Manual Service Bypass	Automatic Static bypass
	PROTECTION	
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses
29	Input over and under voltage	UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS
30	Output over & under voltage	The load connected to the UPS should be protected under any circumstance
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level
33	DEGREE OF PROTECTION	IP 20
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup
	QUALITY STANDARDS	
37	UPS	ISO 9001:2008
38	Battery	ISO 14001
39	Rack and Links	Battery Rack, Links and installation have to be provided
40	Backup Time	60 Minutes on full load

B. 6 KVA Online UPS:

S.No.	Description	Specification
1	Capacity	6 KVA
2	Technology	Digital signal processor controlled True Online, High Frequency
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation
4	Noise Level	Less than 50 dB
5	Operating Temperature	0-45 degree centigrade
6	Humidity	10 to 95% no-condensing
7	Harmonic Distortion	<2% (linear load), <5% (non-linear load)
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)
9	Crest Factor	Minimum 3:1 at full load
10	Output Wave Form	Pure Sine wave
11	Cold Start feature	Required
	INPUT	
12	Input	Single phase 3 wire
13	Input Voltage Range	1 phase 230VAC+ Neutral +earth
14	Input Frequency Range	46-54Hz
15	Power Factor	>0.9
	OUTPUT	
16	Output Voltage	220/230 VAC programmable1 phase + N
17	Output Frequency	50hz +/- 0.5% (Free running)
	EFFICIENCY	
18	AC to AC	93%
19	DC to AC	94%
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break
21	LOAD POWER FACTOR	0.9% lag to unit
22	OVERLOAD CAPACITY	125 % for 10 mts 150% for 1mts
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short
	ISOLATION	
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch
25	Isolation Transformer	At input
26	Galvanic Isolation	Required
27	Manual Service Bypass	Automatic Static bypass

	PROTECTION	
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses
29	Input over and under voltage	MCB with alarm. UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS
30	Output over & under voltage	MCB with alarm. The load connected to the UPS should be protected under any circumstance
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level
33	DEGREE OF PROTECTION	IP 20
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup
	QUALITY STANDARDS	
37	UPS	ISO 9001:2008
38	Battery	ISO 14001
39	Rack and Links	Battery Rack, Links and installation have to be provided
40	Backup Time	60 Minutes on full load

C. 10 KVA Online UPS:

S.No.	Description	Specification
1	Capacity	10 KVA
2	Technology	Digital signal processor controlled True Online, High Frequency
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation
4	Noise Level	Less than 50 dB
5	Operating Temperature	0-45 degree centigrade
6	Humidity	10 to 95% no-condensing
7	Harmonic Distortion	<2% (linear load), <5% (non-linear load)
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)
9	Crest Factor	Minimum 3:1 at full load
10	Output Wave Form	Pure Sine wave
11	Cold Start feature	Required
	INPUT	
12	Input	Three phase 4 wire
13	Input Voltage Range	415VAC+ Neutral +earth
14	Input Frequency Range	46-54Hz
15	Power Factor	>0.9
	OUTPUT	
16	Output Voltage	220/230 VAC programmable1 phase + N
17	Output Frequency	50hz +/- 0.5% (Free running)
	EFFICIENCY	
18	AC to AC	93%
19	DC to AC	94%
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break
21	LOAD POWER FACTOR	0.9% lag to unit
22	OVERLOAD CAPACITY	125 % for 10 mts 150% for 1mts
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short
	ISOLATION	
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch
25	Isolation Transformer	At input
26	Galvanic Isolation	Required

27	Manual Service Bypass	Automatic Static bypass
	PROTECTION	
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses
29	Input over and under voltage	MCB with alarm. UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS
30	Output over & under voltage	MCB with alarm. The load connected to the UPS should be protected under any circumstance
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level
33	DEGREE OF PROTECTION	IP 20
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup
	QUALITY STANDARDS	
37	UPS	ISO 9001:2008
38	Battery	ISO 14001
39	Rack and Links	Battery Rack, Links and installation have to be provided
40	Backup Time	60 Minutes on full load

ANNEXURE-V

TECHNICAL COMPLIANCE REPORT:

A. 3 KVA Online UPS:

S. No.	Description	Specification	Numerical Values or Other Specification	Whether Comply Yes/No
1	Capacity	3 KVA		
2	Technology	Digital signal processor controlled True Online, High Frequency		
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation		
4	Noise Level	Less than 50 dB		
5	Operating Temperature	0-45 degree centigrade		
6	Humidity	10 to 95% no-condensing		
7	Harmonic Distortion	<2% (linear load), <3% (non-linear load)		
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)		
9	Crest Factor	Minimum 3:1 at full load		
10	Output Wave Form	Pure Sine wave		
11	Cold Start feature	Required		
	INPUT			
12	Input	Single phase 3 wire		
13	Input Voltage Range	1 phase 230VAC+ Neutral +earth		
14	Input Frequency Range	46-54Hz		
15	Power Factor	>0.9		
	OUTPUT			
16	Output Voltage	220/230 VAC programmable1 phase + N		
17	Output Frequency	50hz +/- 0.1% (Free running)		
	EFFICIENCY			
18	AC to AC	93%		
19	DC to AC	94%		
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break		
21	LOAD POWER FACTOR	0.9% lag to unity		

22	OVERLOAD CAPACITY	150 % for 30 Sec,110% for 1mts		
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short		
	ISOLATION			
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch		
25	Isolation Transformer	At input		
26	Galvanic Isolation	Required		
27	Manual Service Bypass	Automatic Static bypass		
	PROTECTION			
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses		
29	Input over and under voltage	UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS		
30	Output over & under voltage	The load connected to the UPS should be protected under any circumstance		
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature		
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level		
33	DEGREE OF PROTECTION	IP 20		
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP		
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload		
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup		
	QUALITY STANDARDS			
37	UPS	ISO 9001:2008		
38	Battery	ISO 14001		
39	Rack and Links	Battery Rack, Links and installation have to be provided		
40	Backup Time	60 Minutes on full load		

B. 6 KVA Online UPS:

S. No.	Description	Specification	Numerical Values or Other Specification	Whether Comply Yes/No
1	Capacity	6 KVA		
2	Technology	Digital signal processor controlled True Online, High Frequency		
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation		
4	Noise Level	Less than 50 dB		
5	Operating Temperature	0-45 degree centigrade		
6	Humidity	10 to 95% no-condensing		
7	Harmonic Distortion	<2% (linear load), <5% (non-linear load)		
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)		
9	Crest Factor	Minimum 3:1 at full load		
10	Output Wave Form	Pure Sine wave		
11	Cold Start feature	Required		
	INPUT			
12	Input	Single phase 3 wire		
13	Input Voltage Range	1 phase 230VAC+ Neutral +earth		
14	Input Frequency Range	46-54Hz		
15	Power Factor	>0.9		
	OUTPUT			
16	Output Voltage	220/230 VAC programmable1 phase + N		
17	Output Frequency	50hz +/- 0.5% (Free running)		
	EFFICIENCY			
18	AC to AC	93%		
19	DC to AC	94%		
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break		
21	LOAD POWER FACTOR	0.9% lag to unit		
22	OVERLOAD CAPACITY	125 % for 10 mts 150% for 1mts		
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short		

	ISOLATION			
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch		
25	Isolation Transformer	At input		
26	Galvanic Isolation	Required		
27	Manual Service Bypass	Automatic Static bypass		
	PROTECTION			
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses		
29	Input over and under voltage	MCB with alarm. UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS		
30	Output over & under voltage	MCB with alarm. The load connected to the UPS should be protected under any circumstance		
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature		
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level		
33	DEGREE OF PROTECTION	IP 20		
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP		
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload		
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup		
	QUALITY STANDARDS			
37	UPS	ISO 9001:2008		
38	Battery	ISO 14001		
39	Rack and Links	Battery Rack, Links and installation have to be provided		
40	Backup Time	60 Minutes on full load		

C. 10 KVA Online UPS:

S. No.	Description	Specification	Numerical Values or Other Specification	Whether Comply Yes/No
1	Capacity	10 KVA		
2	Technology	Digital signal processor controlled True Online, High Frequency		
3	Inverter Technology	PWM technology with IGBTs with built In galvanic isolation		
4	Noise Level	Less than 50 dB		
5	Operating Temperature	0-45 degree centigrade		
6	Humidity	10 to 95% no-condensing		
7	Harmonic Distortion	<2% (linear load), <5% (non-linear load)		
8	Battery recharge time to 100% charge	8 Hours (After Complete discharge)		
9	Crest Factor	Minimum 3:1 at full load		
10	Output Wave Form	Pure Sine wave		
11	Cold Start feature	Required		
	INPUT			
12	Input	Three phase 4 wire		
13	Input Voltage Range	415VAC+ Neutral +earth		
14	Input Frequency Range	46-54Hz		
15	Power Factor	>0.9		
	OUTPUT			
16	Output Voltage	220/230 VAC programmable1 phase + N		
17	Output Frequency	50hz +/- 0.5% (Free running)		
	EFFICIENCY			
18	AC to AC	93%		
19	DC to AC	94%		
20	**STATIC SWITCH** (Bi-directional) for all ratings	Should take care of 100% load transfer without break		
21	LOAD POWER FACTOR	0.9% lag to unit		
22	OVERLOAD CAPACITY	125 % for 10 mts 150% for 1mts		
23	UPS SHUT DOWN	UPS shut down with alarm and Indication in case of Output over voltage, Output under voltage, Battery Low, Inverter over load, Over temperature, Output short		

	ISOLATION			
24	Isolation of power	Both input & Output have MCB's. Also battery connection have MCB/MCCB/ switch		
25	Isolation Transformer	At input		
26	Galvanic Isolation	Required		
27	Manual Service Bypass	Automatic Static bypass		
	PROTECTION			
28	Short Circuit Protection	MCB / MCCB Trips and UPS shut down without Blowing any fuses		
29	Input over and under voltage	MCB with alarm. UPS safe in the case of high Voltage/High Current/ high spike/ high surges at input to the UPS		
30	Output over & under voltage	MCB with alarm. The load connected to the UPS should be protected under any circumstance		
31	INDICATORS	Mains on, Inverter On/Off, Faulty Battery level, Load level, Static Bypass ON, Battery Low, Battery Over charge, Inverter overload/Current, Over temperature		
32	LCD DISPLAY	Input / Output voltage, Output frequency, Load current, Battery voltage, Load Level		
33	DEGREE OF PROTECTION	IP 20		
34	COMMUNICATION INTERFACE	RS 232 port for auto shut down, SNMP		
35	AUDIBLE ALARM	Battery low, Mains failure, Output over current, Overload		
36	**BATTERY**	Suitable Nos. of SMF batteries for 60 minutes backup		
	QUALITY STANDARDS			
37	UPS	ISO 9001:2008		
38	Battery	ISO 14001		
39	Rack and Links	Battery Rack, Links and installation have to be provided		
40	Backup Time	60 Minutes on full load		

ANEXURE-VI

DETAILS OF EQUIPMENTS TO BE SUPPLIED AT VARIOUS IKGPTU CAMPUSES:

S. NO.	ITEMS/ EQUIPMENTS	Kapurthala	Amritsar	Batala	Bhikhiwind	Dinanagar	Hoshiarpur	TOTAL
1	**UPS 3 KVA**	12	2	2	2	2	-	**20**
2	**UPS 6 KVA**	2	-	-	-	-	-	**2**
3	**UPS 10 KVA**	10	3	5	4	3	3	**28**