



LIST OF WORKS

	<p>MADURAI KAMARAJ UNIVERSITY <i>(UNIVERSITY WITH POTENTIAL FOR EXCELLENCE)</i> Palkalai Nagar, Madurai 625 021, Tamil Nadu. INDIA.</p>		
Lr. No. R38 /MKU/RUSA/Advt./2017		Date :28.12.2017	
For and on behalf of Madurai Kamaraj University, the sealed tenders (two-cover system) are invited by the Registrar, Madurai Kamaraj University, Madurai 625 021, under the RUSA scheme, for the supply and installation of the following items, from the Reputed Suppliers/executors.			
ITEM No.	NAME OF THE ITEM / EQUIPMENTS	EMD Amount (1% of the estimate cost)	Period of Contract
1.	Supply and installation of Portable Ventilator	11,600	90 days
2.	Supply and installation of Fully Automated Biochemistry Analyzer	12,000	90 days
3.	Supply and installation of Ultra Sound System	18,800	90 days
4.	Supply and installation of Digital X ray Machine 100 mA	17,900	90 days
Tenders are invited until 3.00 pm on 17.01.2018 which will be opened by the Registrar, Madurai Kamaraj University at his office at 03.30 p.m. on the same day in the presence of the Tenderers or their agents who choose to be present at the time of opening. For each item, separate bids must be submitted and should not be clubbed together.			
The specifications, terms and conditions are available in the University website www.mkuniversity.ac.in from 28.12.2017. Also would be available at www.tenders.tn.gov.in The tender documents are available for downloading free of cost at the websites.			
Printed tender documents can be obtained from RUSA office, Madurai Kamaraj University upon remitting the fee in the form of DD in favor of RUSA, Madurai Kamaraj University payable at Madurai.			
Cost of Printed tender documents Rs. 3,540/- (inclusive of GST) and can be obtained from RUSA office, Madurai Kamaraj University until 11.30 am of the last date of Tender submission.			
REGISTRAR			

TENDER SCHEDULE

Tender Announcement Date	:	28-12-2017
Publication Date on Portal	:	28-12-2017
Pre-Bid Meeting	:	05.01.2018, 2.30 P.M
Last date for Submission	:	17-01-2018 until 3.00 PM
Tender-Technical Bid Opening	:	17-01-2018, 3.30 PM
Price-Bid-Opening	:	Will be intimated to the qualified bidders.



Madurai Kamaraj University
(University with Potential for Excellence)
PALKALAI NAGAR, MADURAI – 625 021



TENDER DOCUMENT

Terms and condition for the Supply & Installation of _____ (Specify the name of the equipment) with Item No. _____ (Specify the Item No.) for Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021, as per Guidelines of Government of Tamil Nadu Tender Transparency Act for the purchase of equipments by Government Departments, Undertakings and Autonomous Bodies [April 1998]

1. DUE DATE AND TIME

Sealed Tenders, in are invited by the Registrar, Madurai Kamaraj University under two cover system from the reputed manufacturing concerns or Original Equipment Manufacturer/ their regional Agents / Authorized dealers and suppliers for the supply and installation of _____ (Specify the name of the equipment) with Item No. _____ (Specify the Item No.), as per specifications indicated in the Commercial bid.

The duly filled Tender forms containing the Technical Bid and Commercial Bid should reach **on or before 03.00 p.m of the date specified in the tender schedule**. Tenders received after due date and time will be summarily rejected.

The EMD (approx. 1% of the estimated cost) should be enclosed in the Technical bid only.

2. MODE OF DESPATCH

Tenders should be addressed to the Registrar, Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021, by designation and should be only in sealed covers by Registered or Speed Post with Acknowledgement due or in person. Tenders received in ordinary covers without seal will not be considered.

3. SUPERSCRPTION

For each item, separate bids must be submitted and should not be clubbed together. The Tender should be sealed and superscribed as “Tender for Supply & Installation of _____ (Specify name of the equipment) with Item No. _____ (Specify the Item No.), for Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021, due on **the date and time specified in the Tender schedule of this document.**

The Tender document relating to the Technical Bid duly filled in and signed must be put in sealed cover super scribed as **“Technical Bid”**. The Tender document relating to the Commercial Bid must be duly filled in and signed and must be put in a sealed cover separately, super scribed as **“Commercial Bid”**. The sealed Tender cover containing the Technical Bid (**with EMD**) and Commercial Bid should be sent to the Registrar, Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021. Covers received without such superscription will be summarily rejected.

4. EARNEST MONEY DEPOSIT

Each Tender should be accompanied by Earnest Money Deposit of E.M.D. (as specified in page No.2 of this document) by Demand Draft drawn in favour of RUSA, Madurai Kamaraj University. The Earnest Money Deposit of any unsuccessful tenderers will be returned after the acceptance of the successful tender, at the expenses of the Tenderers within a reasonable time consistent with the rules and regulation on this behalf. The above **EARNEST MONEY DEPOSIT** amount held by the University till it is returned to the Tenderers would not earn any interest therefor. Earnest Money Deposit of the successful Tenderer may be adjusted towards security deposit for the successful tenderer.

5. ELIGIBILITY CRITERIA

The bidders must fulfill the following Eligibility conditions and also submit documentary evidence in support of fulfilling these conditions while submitting the Technical Bid. The University will consider the Commercial Bid of the vendors who qualify in the Technical bid. For those vendors who are not qualified in the Technical Bid, the Commercial bid will not be considered. The bidder should have a record of at least a few installations at reputed institutions / organizations and sufficient service back-up in Tamil Nadu / South India for all types of related works. The Tenderer should submit the latest **Income Tax and Commercial Tax Clearance certificates**. The bidder should have at least three years experience and focus on related business, as on 31-12-2017 and a minimum average annual turnover 10 times the approximate cost of the quote value of the items to be purchased in the last three years.

6. DETAILS TO BE FURNISHED AND MODE OF PRESENTATION

The Tender should contain particulars like name and addresses of the Tenderers, net rate including excise duty, custom duty* (for imported item, clearing and forwarding charges, surcharge, GST, freight, octroi, insurance for delivery, delivering up to the point, installation and commissioning of the equipment and such other levies that may be applicable.

- a. The rates should be kept firm for **Ninety days** from the date of the opening of the Tenders for acceptance.
- b. The rate should be quoted for each item with specification and model if applicable and should be indicated clearly both in words and figures. Any **scoring or overwriting** should be attested by the Tenderer with full signature. The rate quoted should be firm and **should not be subject** to any variation clauses.

- c. The **University shall not pay any increase in duties, taxes and** surcharges on account of any revision by the Government at the time of supply and installation.
- d. Supply of the equipment and other accessories shall be as per the specifications mentioned in the corresponding Appendixes and according to the delivery and installation schedule indicated.

7. OPENING OF TENDERS:-

The tenders received upto 03.00 p.m. **on the date specified in the Tender Schedule** will be opened by the Registrar, or any other officer authorized by him on his behalf at 03.30 p.m. on the same day in the presence of those Tenderers or their representatives who may be present at the time of opening. The representatives of the Tendering firm who are attending the opening of the Tenders should bring a letter of authority from the Tendering firms which they represent to identify their bonafide.

8. AGREEMENT:

- a. The successful tenderer should execute an agreement for the fulfillment of the contract in the stamp paper in the model form enclosed in Appendix, within fifteen days from the date of acceptance of the tender.
- b. The expenses incidental to the executing of agreement shall be borne by the successful Tenderer.
- c. The conditions stipulated in the agreement form should be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to the rights of the University and recovery of any consequential loss from the successful Tenderer.

9. SECURITY DEPOSIT:

- a. The successful Tenderer will be required to remit the **Security Deposit** equivalent to **Five percent** of the value of the Purchase order within **fifteen days** from the date of receipt of communication/intimating them of the acceptance of the Tenders. If the accepted Tenderer fails to remit the Security Deposit within the above said period, the Earnest Money Deposit remitted by him will be forfeited to the Madurai Kamaraj University and his Tender will be held void. Purchase order will be released after execution of the above contract by the successful Tenderer and after remitting the Security Deposit by way of Demand Draft / Bankers' cheque / irrevocable bank guarantee drawn in favour of RUSA, Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021.
- b. The Security Deposit furnished by the Tenderer in respect of his Tender will be returned to him at the **end of the warranty period** subject to the satisfaction of the University.

- c. In case of successful Tenderer, The Earnest Money Deposit, if paid, may be adjusted towards Security Deposit the Tenderer remitted.
- d. If the Tenderer fails to act according to the Tender or backs out when his Tender is accepted, his Security Deposit mentioned above will be forfeited to the University.

10. SUPPLY AND INSTALLATION OF EQUIPMENTS

- a. The supply and installation of equipments/items and other accessories should be made strictly in accordance with the specifications given in the Commercial Bid and should successfully fulfill the tests carried out by the University. The supply and installation should be as per the delivery schedule to be sent by the University along with the placement of firm orders. The successful Tenderer should give guarantee for a period of **three-years** for the equipment and other accessories installed, against breakage or breakdowns due to manufacturing defects. The guarantee period takes effect from the date of satisfactory trial run. The Tenderer shall be liable to make good the loss by replacing the equipment or other accessories found defective during the guarantee period. The equipment hardware should be installed in the premises of the University at the cost and risk of the Tenderer.
- b. The material or goods are to be guaranteed for a period of at least three-years after installation and commissioning against manufacturing defect and bad workmanship. The warranty period specified, will commence from the date of handing over the equipment after running and carrying out successfully the tests prescribed by the University to its satisfaction.
- c. Documents such as operation manuals, user manuals and circuit diagrams and other relevant materials shall be provided by the Tenderer along with equipment, free of cost.
- d. If the supply, installation and commissioning of the systems are not effected before the specified period from the date of purchase order, the University shall have the authority to cancel the order and to take any such action which will be deemed fit in the circumstances.
- e. If any manufacturing or other technical defects are found within the specified months from the date of installation, commissioning and handing over the system to the University Authorities, the same will have to be rectified or replaced free of cost by the supplier.
- f. During the warranty period, if due to manufacturing and other technical defects of the equipment supplied, the system is down and if it is not restored in working condition within 48 hours, the supplier shall be liable for a penalty of one percent per week during breakdown period on the total contract price.
- g. The warranty will cover all the materials and goods supplied by the supplier under this contract irrespective of the fact whether these have been manufactured by the supplier or not.
- h. In case of failure by the Tenderer to deliver goods or materials demanded from them within the period specified for delivery or in case of goods or materials being delivered without a correct invoice in duplicate, the Registrar or anyone duly authorized by him

shall have power to reject any such goods or materials so rejected or not delivered unless the supplier shall themselves forthwith supply others that shall be sufficient and satisfactory and any excess of cost so incurred by the Tenderer over the contract price together with all charges and expenses attending the purchase shall be recoverable by the University from the supplier.

- i. The successful Tenderer shall supply licensed versions of the equipment systems. The University will not be held responsible for any consequences arising of patent right problems.
- j. The equipment should be demonstrated to the representatives of the Specifications Committee before shipment is effected.

11. PAYMENT OF COSTS:

The terms of payments for purchase of equipments:

- a. 95% of the total cost of equipments/items will be paid on installation, commissioning and handing over of the Equipments after testing all the software and fulfilling the technical specifications. The testing that should be carried out for commissioning the material supplied and the satisfactory working of the systems are to be certified by the University.
- b. The balance 5% will be retained for one year from the date of completion/installation of work.

12. FORFEITURE OF EARNEST MONEY DEPOSIT:

If the accepted Tenderer fails to act according to the tender conditions or backs out after his tender has been accepted, his Earnest Money Deposit will be forfeited to the University.

The successful Tenderer shall not assign or make over the contract, the benefit of burden thereof to any other person or persons or body corporate. He shall not underlet or sublet to any person/s or body corporate for executing the contract or any part thereof.

13. PENALTY FOR NON-FULFILMENT OF TENDER:

Penalty will be levied at the rate of 1% per week on the total contract price if the installation and commissioning has not been completed in full within the stipulated period subject to force majeure conditions. Besides, such performance may entail black listing of the supplier.

14. ACCEPTANCE AND WITHDRAWALS:

The final acceptance of the tender is entirely vested with **University which reserves the right to accept or reject** any or all the tender without assigning any reason whatsoever. There is no obligation on the part of the University to communicate with rejected Tenderers. After acceptance of the tender by the University, the Tenderer shall have no right to withdraw his Tender or claim higher price. Tenders with incomplete information will be summarily rejected.

15. POST WARRANTY:

The post warranty annual maintenance charges (AMC) is applicable for the remaining period after the satisfactory completion of the warranty period offered by the vendor. The annual maintenance charges should be indicated.

The AMC payable from the date of completion of warranty in advance against invoices/bill to be preferred by the vendor. The vendor agrees to provide comprehensive maintenance of the equipment, which shall include preventive maintenance and corrective maintenance at the location specified by the University. The maintenance shall also include replacement of all parts of equipments. The equipment which is down should be restored in good working condition within 48 hours. Otherwise the supplier shall be liable for a penalty of 1% per week of the breakdown period on the total price of the system. The University reserves the right to terminate the maintenance contract in the event of unsatisfactory maintenance and claim damages for non-fulfillment of contract.

16. PENALTY FOR NON-FULFILMENT OF CONDITIONS

The supplier agrees that in the event of non-fulfillment or non-observance of any of the conditions stipulated in the conditions, the Supplier shall pay as penalty an amount equivalent to 10%(ten) percent of total value of equipment or an amount equal to the actual loss incurred by the purchaser whichever is greater. This provision applies up to the end of the life cycle of the equipments (i.e.) even during the post warranty period.

17. EXEMPTION OF CUSTOMS DUTY AND EXISE DUTY

The Madurai Kamaraj University, being a Research oriented higher education institution, is exempted from paying Excise duty and Customs duty / Concessional Customs Duty. The supplier shall therefore obtain Exemption Certificate from the University, issued by the Government of India, before clearing the consignment.

18. TIME-SCHEDULE

Time-schedule is mandatory. Supply should be made within 45 days for any purchase. If not supplied or part only is supplied, then concurrence for purchase from L2 to be got from L1. If no concurrence is given by L1, then notice to be issued and after 15 days L2 is called and negotiated for the supply at L1 rate, or at a lesser price originally quoted by L2. University is vested with the power of modifying the quantity, time and alteration in the specification without hindering the requirements. Those who are agreeable for the above terms should only apply for the tender.

18. GENERAL

The tenderers while sending their tender should enclose a copy of the conditions stipulated duly certified and attested by them in token of accepting the tender conditions that they

understood and accepted them in full. Tenders received without the certified copy of the conditions shall be rejected summarily.

I/We _____ have gone through the terms and conditions and will abide by them as laid down above.

SIGNATURE OF THE TENDERER

WITH OFFICE SEAL

OTHER APPLICABLE CONDITIONS FOR ALL THE ITEMS:

1. The quotation must specify the period within which the supply could be effected from the date of receipt firm orders.
2. The prices quoted should clearly specify charges for delivery of the goods to destination indicated overleaf.
3. Sales tax or any other taxes/GST if applicable should be shown separately giving the full rate of taxes for each items giving ex-incident of such levies.
4. If the rates are under D.G.S. & D. Please specify the same clearly enclosing necessary documents.
5. ***The brochure / leaflets/ catalogue, etc. describing the technical features of the offered equipment must be submitted for proper evaluation and would be considered for technical evaluation.***
6. Dealership certificate on the offered products must be included in case the vendor is a dealer.
7. The vendor must have credential in supplying such system in any institute of national importance and similar organizations
8. Bidder should have valid Service Tax registration number, GST number and meet all legal requirements.
9. Any amendment / corrigendum to the RFP (Request for proposed) document shall be posted on the University Website
10. MKU University reserves the right to call for any other details or information from any of the Bidders. Moreover, the University reserves all rights to reject any bid at any time, at any stage, fully or partly for whole process and / or for particular bidder and also reserves all rights at any time to add, alter, modify, change, edit & delete any condition at any stage. MKU also reserves the right to cancel the entire tender process without assigning any reason. In this regard, the decision of University shall be final and binding on all the participants.
11. Every page of the RFP document shall be signed by the bidder or by a person duly authorized by the bidder.
12. Bidder shall submit letter of authorization, authorizing the person signing the RFP document on behalf of the bidder.
13. All changes, alterations, corrections in the RFP document shall be signed in full by the person(s) signing the RFP document, with date. No eraser and/or over writing without authentications is/are permissible.
14. The complete RFP document along with the documentary evidence should be numbered.

15. The bidder shall carefully examine and understand the scope of work, specifications/conditions of RFP and seek written clarifications, if required, to ensure that they have understood all scope of work, specifications/conditions of RFP.
16. If the bidder has NSIC certification they will get the NSIC benefits.
17. If the bidder, after submission, revokes his bid or modifies the terms and conditions thereof during the validity of his bid except where the University has given opportunity to do so, the earnest money deposit submitted by Bidder shall, in such case, be forfeited.
18. The successful bidder i.e. Service Provider, within 15 days of receipt of Letter of Intent or within such extended time as may be allowed by University in its discretion, shall submit a Performance Bank Guarantee for an amount equal to 5% of the contract value having validity of 36 months (after Completion of warranty). In case of extension of maintenance contract, the Service Provider shall submit a fresh Bank Guarantee for the Contract value covering the extended period of AMC.

TECHNICAL BID

MADURAI KAMARAJ UNIVERSITY, PALKALAI NAGAR, MADURAI – 625 021

Tender Schedule for the Supply & Installation of(Specify the Name of Equipment) with Item No. (Specify the Item No.) Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021.

Profile of the Company:

The Company should provide the following details

1. Name of the Organization	
2. Nature of the Organization (Govt. / Public / Private / Partnership /Proprietorship)	
3. (a) Address of the Registered Office of the firm with Phone Number, Cell No, Fax and E-mail. (b) Year of Establishment (related to Printers business) (c) TNGST & CST Reg No./GST No. (d) If approved small scale	
4. Annual turnover for the previous three years as on I. General : II. Equipments listed in tender Document	
5. Location of the factory with address	
6. Maintenance and service centre facilities in Madurai city / other areas and total number of Service Engineers available:	
7. Names of the Government Agencies / Educational Institutions to whom similar Machines have been supplied in the preceding Three year	

8. Total experience in the related areas			
9. Is your Company an original manufacturer of the equipments and related items? If yes, state the specific items you Manufacture			
10. What type of maintenance support does your company provide for the pares			
11. What are your conditions for up gradation of Equipments system after the warranty period?			
12. In case of breakdown of the equipment, what will be the mean Downtime? And state whether standby systems will be provided			
13. State the minimum amount of time required to supply the items if your company/ Organization gets the order			
14. State whether you will agree to supply the manuals Drivers for items supplied.			
15. EMD PAYMENT PARTICULARS [The DD should be enclosed in the Technical Bid only]			
(1) Number of Demand Drafts enclosed:			
(2) Demand draft particulars			
Sl.No	Name of the bank and Branch	DD No. and Date	Amount Rs.
Total			

Signature:

Name of the Firm

Phone/Mobile No.

COMMERCIAL BID

Madurai Kamaraj University, Palkalai Nagar, Madurai – 625 021

Tender Schedule for the Supply & Installation of.....(Specify the Name of Equipment) with Item No. (Specify the Item No.) as per specifications below for the use in Madurai Kamaraj University, Madurai – 625 021,.

Sl.	Description/Specification	Qty.	Rate Rs.	Total (Inclusive of all Taxes) Rs.
1.	1. 2. 3. 4.			

Warranty Period should be clearly mentioned: Years

A]

1. Please indicate the Annual Maintenance Charges per annum on the basic price of Equipments, excise duty, sales tax, etc., year wise for the remaining period of 5 years life cycle after warranty period.
2. Indicate the location of service centre, address with phone / fax numbers.
3. Indicate No. of Service Engineers available.
4. Minimum Time required for contact and Service

B]

- a. Please indicate the maximum number of persons you can offer training in the operations of the systems proposed to be purchased
- b. Can you undertake the above training in the premises of the University? If not, where would it be held?
- c. Can you supply documents in triplicate such as operation manuals, user manuals and circuit diagram and other relevant material along with the equipment free of cost?
- d. Any other details in support of the above systems you want to furnish.

ITEM NO. 1: PORTABLE VENTILATOR

Technical specifications

- Must have the versatility to deliver mechanical ventilation, demand and free oxygen flow therapy and CPAP
- Should be a compact and light weight unit (less than or in the range of ~ 5 kg)
- Must be suitable to use in ambulance, hospital, outdoors, MRI scanners, etc.
- Volume Control ventilator
- MRI Conditional upto 3 tesla with a spatial gradient up to 7.5 Tesla/m (750 Gauss/cm)
- Tidal Volume: About 70-1300 ml
- Frequency: in the range of 8-40 bpm
- I:E ratio: 1:2
- FiO₂: 50% and 100%
- Pressure relief valve and alarm: 20-60cmH₂O
- Power source Medical: Oxygen ~280-600kPa
- Patient circuit: About 1.5m long
- PEEP range: About 0-20cm H₂O
- Oxygen Flow range: About 0-35L/min
- CPAP: up to max / in the range of ~10-16cm H₂O at 35l/min flow.
- Alarm for high pressure, low pressure, low battery, low supply of gas, etc.
- Drop Test Compliance - ISO 10651-3:1997, ISO 10651-5:2006 or required certification
- List of installations with i) year of installation, ii) model number, and iii) name of hospitals / organization must be enclosed
- 3 Years Warranty must be included

ITEM NO. 2: FULLY AUTOMATED BIOCHEMISTRY ANALYZER

Technical specifications

- Assay methods: End Point, Kinetic, Fix time etc.
- Principle: Photoelectric colorimetry
- Light Source: Halogen lamp
- Photometry range: 0-3.2Abs
- Resolution: 0.0001Abs
- Wavelength: 340nm\405nm\49nm\510nm\546nm\578nm\630nm\700nm\800nm, etc
- Throughput: 200 tests/hour
- Reagent tray: In the range / not less than 40 sample positions, including detergent, standard, OC, STAT positions
- Reaction tray: In the range / not less than 60 reaction cuvettes
- Sample volume: About 2-100ul, with 0.1ul increment
- Reagent volume: R1:10-300uL, R2: 10-300uL, with 0.5uL increment
- Minimum reaction volume: In the range of 180uL
- Maximum reaction time: About 10 minutes
- Water consumption: About 5L/hour under working status
- Clean unit: 7-step auto-washing system with De-ionized Water or better
- Calibration: Calibration reset, select best test point by reaction curve, no need second calibration Line/non-line, multi-standards assay
- Control rules: Westgard multi-rule, Cumulative sum check, twin plot, Or related with 3 level controls for each item, with the features of analyzing and printing QC analysis diagram
- Must include a suitable printer / printing option
- Must have the provision to transfer the data to PC
- Must provide reagent packs for 10 routinely used tests
- List of installations with i) year of installation, ii) model number, and iii) name of hospitals / organization must be enclosed
- 3 Years Warranty must be included

ITEM NO. 3: ULTRASOUND SYSTEM

Technical specifications

- Must include i) Cardiac Echo probe, ii) Curvilinear – USG probe, iii) Linear Vascular probe and iv) Transvaginal Probe
- Other Features:
- Active Array Technology
- Broadband beam forming and advanced signal processing
- Advanced Doppler and color Doppler capabilities
- Work flow tools
- Configurable report analysis
- Intelligent Scan
- X Res (extreme resolution) adaptive image processing
- Sono CT image compounding
- Must include display monitor.
- Active four probe port connector.
- All probes having pin less connector
- List of installations with i) year of installation, ii) model number, and iii) name of hospitals / organization must be enclosed
- 3 Years Warranty must be included

ITEM NO. 4: DIGITAL X-RAY MACHINE 100 mA

Technical specifications

- Output Power / Rating – RADIOGRAPHY 8 KW as per ISI
- Solid State Electronic Timer with timing range from 0.04 to 8 Sec. in 24 steps (in the range).

Control Panel with the following functions:

- Digital display of mAs, KVP and Radiographic mA.
- Voltmeter to indicate line voltage.
- mA meter to indicate tube current.
- Voltage compensator Coarse and Fine to compensate input voltage variation.
- Booster transformer for stabilization of filament voltage.
- Tech. selector for selection of Rad mA.
- KVP selector in the range of 45 to 100 KVP with 5 KVP/Step
- Time Selector switch for selection of Rad. Time.

Overload protection & safety features:

- Circuit breaker must be included.
- Overload, X-Ray & Line indicators must be provided.
- Electronic overload protection with simultaneous protection from high input voltage/KVP/mA/Time must be provided.

X-RAY Tube Head

- Self-Contained Tube Head containing Stationary Anode X-Ray Tube.
- Focal Spot in the range of 2.8 mm.
- Compact Heavy Duty Full Wave Rectified H.V. Transformer.
- High Voltage Silicon Rectifiers immersed in oil and hermitically sealed.
- Must be able to tilt the tube head 360° with full flexibility for use in O.T's and in wards for bedside radiography.

Tube stand with the following features:

- Mobile Counter balanced Tube Stand.
- Tube Head should be movable UP & Down.
- Tube arm should be articulated in a way to position it with lot of flexibility.

- Tube Head should be rotated easily for taking bedside exposures & Chest X-Rays on the Chest Stand.
- Manual locks for all Rotations/ movements of the Tube Head.
- Lead Lined Cassette Storage Box should be integrated into the Tube Stand.
- Foot Operated Lock to Lock the Stand. Handle for easy Grip to move the Stand.
- Manufacturer must be an ISO13485 Certified Company for Design, Manufacturing and Supply of Diagnostic Medical Equipments.
- Must be approved by B.I.S. for Mechanical & Electrical Safety, Approved by AERB (Atomic Energy Regulatory Board) for Radiation safety.
- List of installations with i) year of installation, ii) model number, and iii) name of hospitals / organization must be enclosed
- 3 Years Warranty must be included