

Response To Pre-Bid Queries (Pre-Bid date: 05.10.2017)

NIB Ref: HITES/PCD/NCI-AIIMS/03/17-18 Dated: 22.09.2017

Schedule No. 02 - 128-Slice PET / CT Scanner (Rfx no. 3000002356)

Sl. No	Tender Page & Para	TENDER SPECIFICATION	NAME OF THE FIRM	REPRESENTATION RECEIVED FROM THE FIRMS	COMMITTEE RECOMMENDATION
1	Part II: Required Delivery Schedule: Page 42	Installation and Commissioning shall be done at the earliest but not later than 45 days of delivery of goods at site or date of handing over the site for installation, whichever is later	Siemens	Request you to amend as "Installation and Commissioning shall be done at the earliest but not later than 60 days of delivery of goods at site or date of handing over the site for installation along with main power , whichever is later."	Line to be Deleted Delivery schedule mentioned in section VI of Bidding Document to be amended suitably.
2	Page 44	4) AERB Registration and site approval.	WIPRO GE	Customer has to take the approval from AERB. We will facilitate the drawings and support in getting the AERB approval.	4) AERB Registration and site approval.: Vendor has to provide the drawings and support in getting the AERB approval.
3	Page 53	128-Slice PET - CT SCANNER : A latest technology whole body Positron Emission Tomography system with 128 slices per rotation , DICOM ready and isotropic volume acquisition spiral CT scanner designed for providing volume measurements of metabolic and physiological processes using positron emitters, as well as for producing accurate structural and anatomical fusion images and making attenuation maps for CT based attenuation correction.	Siemens	Request you to amend as "64-Slice PET-CT SCANNER" Justification: Request you to ensure that the equipment is capable of acquiring the 128 slices with 128 channels to transmit the data which is vendor specific or make it 64 Slice PET CT scanner with capability of acquiring the 64 slices/generating 128 slices as asked in the current tender specifications in order to make it broad based.	A latest technology whole body Positron Emission Tomography system with 128 slices acquisition per rotation , DICOM ready and isotropic volume acquisition spiral CT scanner designed for providing volume measurements of metabolic and physiological processes using positron emitters, as well as for producing accurate structural and anatomical fusion images and making attenuation maps for CT based attenuation correction.
4	Page 54 Para 2. h	2) Gantry and Detector h) The separation (center to center) between slices acquired simultaneously without any axial motion should be : 55 mm.	WIPRO GE	2) Gantry and Detector h) The separation (center to center) between slices acquired simultaneously without any axial motion should be : 5.5 mm or better.	2) Gantry and Detector h) The separation (center to center) between slices acquired simultaneously without any axial motion should be : 5 mm or better
5			Siemens	Request you to amend as "h) The separation (center to center) between slices acquired simultaneously without any axial motion should be : 5 mm. "	
6	Page 54 Para 3. a	Multi detector CT having minimum 64 rows of detectors.	Siemens	Request you to amend as " Multi detector CT having 64 slice/rotation. " Justification: Request you to ensure that the equipment is capable of acquiring the 128 slices with 128 channels to transmit the data or make it 64 slices/rotation to make it broad based.	Multi detector CT having minimum 64 rows of detectors acquiring 128 slices per rotation.
7	Page 54 Para 3. b	3) CT Specifications b) Rotation time should be ≤ 0.5 sec.	WIPRO GE	3) CT Specifications b) Rotation time should be ≤ 0.35 sec.	no change
8	Page 54 Para 3. d	3) CT Specifications d) Image slice width should be from: 0.5mm to 10 mm.	WIPRO GE	0.625 mm to 10 mm	no change
9	Page 54 Para 3. e	3) CT Specifications e) Detector coverage should be at least 24 mm.	WIPRO GE	e) Detector coverage should be at least 38 mm.	3) CT Specifications e) Detector coverage should be at least 38 mm or higher
11	Page 54 Para 3. f	3) CT Specifications f) Low contrast detectability should be at least 4 mm@ 0.3% on 20 cm CATPHAN phantom.	WIPRO GE	f) Low contrast detectability should be at least for an object size of 5 mm@ 0.3% on 20 cm CATPHAN phantom. Specify the dose. Request you to amend as "Low contrast detectability should be at least 5 mm@ 0.3% on 20 cm CATPHAN phantom.	3) CT Specifications f) Low contrast detectability should be at least 5 mm@ 0.3% on 20 cm CATPHAN phantom.
12			Siemens		
13	Page 54 Para 3. g	3) CT Specifications g) High contrast resolution should be better than 15 lp/cm.	WIPRO GE	g) High contrast resolution should be better than 18 lp/cm.	No change



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14	Pg 54, 55 3) h)	CT Specifications High frequency X-Ray generator tube with output of 70 kW or more, Anode heat storage capacity of 7.0 MHU or more, Tube Voltage between 80-140 kV, Tube Current of 20-600mA, Automatic self-testing system.	WIPRO GE	h) High frequency X-Ray generator tube with output of 70 kW or more, Anode heat storage capacity of 7.0 MHU or more, Tube Voltage between 80-140 kV, Tube Current of 20-600mA, Automatic self-testing system.	No change
15			Philips India Limited	High frequency X-Ray generator tube with output of 70 kW or more, Anode heat storage capacity of 7.0 MHU or more, Tube Voltage between 80-140 kV, Tube Current of 20-400mA, Automatic self-testing system.	No change
16	Page 55 Para 4. a	4) Performance Specifications: a) All specifications must comply with NEMA Standards Publication NU 2-2007 or latest performance measurements without altering instrument parameters. QC Software to measure these parameters must be available in the system. c) System efficiency I sensitivity must exceed 5 cps/KBq at 350 KeV. d) System Energy Resolution should be $\geq 14.0\%$.	WIPRO GE	4) Performance Specifications: a) All specifications must comply with NEMA Standards Publication NU 2-2012 or latest performance measurements without altering instrument parameters. QC Software to measure these parameters must be available in the system.	4) Performance Specifications: a) All specifications must comply with NEMA Standards Publication NU 2-2012 or latest performance or latest performance measurements without altering instrument parameters. QC Software to measure these parameters must be available in the system.
17	Page 55 Para 4. b	Performance Specifications: b) Axial & Transverse spatial resolution at 1cm & 10 cm from the central axis of the gantry should be: ≤ 6.5 mm FWHM.	WIPRO GE	b) Axial & Transverse spatial resolution at 1cm & 10 cm from the central axis of the gantry should be: ≤ 5 mm FWHM.	Performance Specifications: b) Axial & Transverse spatial resolution at 1cm & 10 cm from the central axis of the gantry should be: ≤ 5 mm FWHM.
18			Philips India Limited	Axial & Transverse spatial resolution at 1cm & 10 cm from the central axis of the gantry should be: ≥ 4.8 mm FWHM.	
19	Page 55 Para 4. c	4) Performance Specifications: c) System efficiency I sensitivity must exceed 5 cps/KBq at 350 KeV.	WIPRO GE	c) System NEMA sensitivity must exceed 7 cps/KBq at 350 KeV.	no change
20	Page 55 Para 4. d	4) Performance Specifications: d) System Energy Resolution should be $\geq 14.0\%$.	WIPRO GE	d) System Energy Resolution should be $\leq 14.0\%$.	4) Performance Specifications: d) System Energy Resolution should be $\leq 14.0\%$.
21	Page 55 Para 5. b	5) Patient Bed: b) It should be able to bear 180 kg or more patient weight.	WIPRO GE	5) Patient Bed: b) It should be able to bear 225 kg or more patient weight.	no change
22	Page 56 Para 6. c	6) Workstation (Data Acquisition, Processing & Management) c) The processing workstation should be high performance CPU with multi tasking operating system having minimum of 32 GB RAM, 3 GHz processor speed, minimum 1GB graphic card, 2TB or more SCSI hard drive (if less, another HDD may be included), Optical Mouse, Key-board and high resolution flat panel dual view LCD monitor of minimum 19" size with minimum resolution of 1280 x 1024. It should also have CD and DVD combo drive preferably with writer facility.	Siemens	Request you to amend as "The processing workstation should be high performance CPU with multi tasking operating system having minimum of 8 GB RAM, 2.53 GHz processor, minimum 1GB graphic card, 300 GB storage capacity or more, Optical Mouse, Key-board and high resolution flat panel dual view LCD monitor of minimum 19" size with minimum resolution of 1280 x 1024. It should also have CD and DVD combo drive preferably with writer facility.	6) Workstation (Data Acquisition, Processing & Management) c) The processing workstation should be high performance CPU with multi tasking operating system having minimum of 8 GB RAM, 2.53 GHz processor speed, minimum 1GB graphic card, 300 GB storage capacity or more, Optical Mouse, Key-board and high resolution flat panel dual view LCD monitor of minimum 19" size with minimum resolution of 1280 x 1024. It should also have CD and DVD combo drive preferably with writer facility.
23	Page 56 Para 6. e	6) Workstation (Data Acquisition, Processing & Management). e) Reconstruction filters - Shepp-Logan, Hanning, Hamming Parzen, Ramp, Butterworth and all other latest available filters with the company for PET applications.	WIPRO GE	6) Workstation (Data Acquisition, Processing & Management). e) Reconstruction filters - <remove filter names> latest available filters with the company for PET applications.	6) Workstation (Data Acquisition, Processing & Management). e) Reconstruction filters - latest available filters with the company for PET applications.
24	Page 56 Para 6. h	6.h) The workstation should be accessible remotely by at-least 5 concurrent workstations for PET and CT each and two extra laptop based processing station.	Siemens	Request you to specify whether single workstation is required or 5 clients(5 workstations) as client server architecture are required.	6.h) The workstation should be accessible remotely by at-least 5 concurrent workstations for PET and CT each.

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Schedule No. 02 - 128-Slice PET / CT Scanner (Rfx no. 3000002356)

Sl. No	Tender Page & Para	TENDER SPECIFICATION	NAME OF THE FIRM	REPRESENTATION RECEIVED FROM THE FIRMS	COMMITTEE RECOMMENDATION
25	Page 56 Para 7.b	7) Software: b) 4D CT Scanning facility: 4D CT Scan software with 4D phantom for QA shall be provided and separately there shall be 4D CT Respiratory Gating hardware to be provided.	Siemens	Request you to amend as " 4D gating interface and 4D CT acquisition software should be provided by CT manufacturer." Justification: 4D Gating hardware which is specific to the linear accelerator and therefore should be included in their scope	7) Software: b) 4D CT Scanning facility: 4D CT Scan software with 4D phantom for QA shall be provided and separately there shall be 4D CT Respiratory Gating hardware to be provided. 4D CT Respiratory Gating hardware to be quoted as option. Price for 4D gating to be quoted separately.
26	Page 57 Para 2.b	2. Clinical Application Software b) Neuro quantification software including assessment of dementia using SUV values, quote as option item with detailed specification.	WIPRO GE	2. Clinical Application Software b) Neuro quantification software including assessment of dementia with normal database as standard.	2. Clinical Application Software b) Neuro quantification software including assessment of dementia using SUV values. Provide detailed specification of s/w quoted.
27	Page 57 Para 2.c	2. Clinical Application Software c) Quote complete cardiac package both for PET and CT with ECG gating as optional item.	WIPRO GE	c) Quote complete cardiac package both for PET and CT with ECG gating as standard.	No change
28	Page 57-58 Para 2.k	2. Clinical Application Software k) All future software upgrades including associated hardware during warranty period and CMC shall be free of cost.	WIPRO GE	k) All future software updates including associated hardware during warranty period and CMC shall be free of cost.	2. Clinical Application Software k) All future software updates including associated hardware during warranty period and CMC shall be free of cost.
29			Siemens	Request you to amend as " All software updates should be provided free of cost."	
30	Page 58 Para: 7.	7. Software: l) The CT Simulation workstation should be fully integrated and networked with the treatment planning system for 3D CRT, IMRT/IGRT and with portal imaging workstation at the linac console. m) It should have capabilities for 3D viewing of images along with tools for constructing and display of high resolution (512 X 512 pixels) DRRs and MPRs. n) Tools for auto-contouring of normal structures along with manual contouring of normal structures and target volumes should be included. Editing, copy and paste of structures. o) 30 margin tools from GTV to CTV to PTV should be available. p) Should have capability to do online CT simulation (while patient remains on CT couch) and also offline CT simulation at physician's workstation. q) Tools for beam placement including MLC of any make and isocentre determination should be included. The tracking laser system should be linked to the virtual simulation software r) The supplier will be responsible for complete networking and integration between the CT Simulation workstation, Treatment Planning System and portal imaging workstation for import and export of image and data. s) Should be a fully DICOM RT "plug and play" system for import and export of CT/MRI/PET images, RT structures and	Siemens	Request you to delete this point as it pertains to CT simulator which is already asked in tender NIB Ref: HITES/PCD/NCI-AIIMS/04/17-18	to be Deleted
31	Pg 58 8) d)	Peripherals / Accessories Supply of Germanium-68 pin source for a period of 5 years. - Specification of Ge-68 Pin source: 55 MBq (1.49mCi) Ge-68 uniformly dispersed in a ceramic medium with an outer stainless tube and permanently sealed end caps.	Philips India Limited	Supply of Germanium-68/Na -22 pin source for a period of 5 years. - Specification of Ge-68 Pin source: 55 MBq (1.49mCi) Ge-68 uniformly dispersed in a ceramic medium with an outer stainless tube and permanently sealed end caps.	Peripherals / Accessories Supply of Germanium-68 / Na22 pin source for a period of 5 years. - Specification of Ge-68 Pin source: 55 MBq (1.49mCi) Ge-68 uniformly dispersed in a ceramic medium with an outer stainless tube and permanently sealed end caps.

Schedule No. 02 - 128-Slice PET / CT Scanner (Rfx no. 300002356)

Sl. No	Tender Page & Para	TENDER SPECIFICATION	NAME OF THE FIRM	REPRESENTATION RECEIVED FROM THE FIRMS	COMMITTEE RECOMMENDATION
32	Page 58 Para 8.g	8) Peripherals / Accessories g) Four dose calibrators (Capintec- CRC 25 PET or equivalent).	WIPRO GE	8) Peripherals / Accessories g) Two dose calibrators (Capintec- CRC 25 PET or equivalent).	No change
33	Page 59 Para 9.b	9) Others b) Two latest editions PET CT Atlas for image interpretation of PET CT.	WIPRO GE	<please remove>	to be deleted
34	Pg 59 9) d)	9) Others Fume hood for PET and SPECT CT Radio pharmacy.	Philips India Limited	Fume hood for PET Radio pharmacy.	9) Others Fume hood for PET Radio pharmacy.
35	Page 59 Para 9.f	9) Others Tungsten Syringe carriers for PET Radiopharmaceuticals, 5 cc: 04 no.	Philips India Limited	to be deleted	no change
36	Page 59 Para 9.h	9) Others h) Dose calibrator for all PET & SPECT radiotracers: 2 no.	WIPRO GE	<remove> this is repeat of 8g	to be deleted
37	Page 59 Para 8.o	8) Peripherals / Accessories o) One digital ion meter (Rotem).	Siemens	Request you to amend as " One digital ion meter (Rotem/ equivalent). "	8) Peripherals / Accessories o) One digital ion meter (Rotem/ equivalent).
38	Page 59 Para 8.p	8) Peripherals / Accessories p) Two digital -mSv / hr range GM based survey-cum-contamination monitors (Rotem).	Siemens	Request you to amend as " p) Two digital -mSv / hr range GM based survey-cum-contamination monitors (Rotem/equivalent). "	8) Peripherals / Accessories p) Two digital -mSv / hr range GM based survey-cum-contamination monitors (Rotem/ equivalent).
39	Page 59 Para 8.s	8) Peripherals / Accessories s) Tungsten lined Carriers (160 mm) for carrying the radiopharmaceuticals from Cyclotron to PET CT to be provided – 20 nos. (unit price to be quoted separately)	Siemens	Request you to specify whether unit price or price for 20 no.s are to be quoted	No change
40	Page 59 Para 9.h	9) Others h) Dose calibrator for all PET & SPECT radiotracers: 2 no.	Siemens	Request you to delete this point as dose calibrator has already been asked under Point 8) Peripherals / Accessories Sub Point g) Four dose calibrators (Capintec- CRC 25 PET or equivalent). (Page no.58).	to be deleted
41	Page 60 Para 9.o	9) Others o) Two physicians and two technologists to be trained for three weeks each by the vendor Optional.	Siemens	Request you to amend as "Two physicians and two technologists to be trained for three weeks each by the vendor at site NCI Jhajjar"	9) Others Four Physicians to be trained onsite for 4 weeks and Two technologist to be trained onsite for 4 weeks.
42	Page 60 Para 10	10) BOQ for the turn key to be submitted by the vendors after the survey and consultation with the institute.	Siemens	Request you to specify the scope of site modification work along with layout, air conditioning work and finishes of civil work.	scope of work for site modification to be included
43	Page 60 Para 11	11) AERB clearance shall be the responsibility of the vendors after completion of the site modification works and installation of the equipment. The institute will render all necessary help and provide needed documents.	WIPRO GE	11) AERB clearance shall be the responsibility of the Institution, vendor has to provide all supporting documentation as part of completion of the site modification works and installation of the equipment. The institute will render all necessary help and provide needed documents. Customer has to take the approval from AERB. We will facilitate the drawings and support in getting the AERB approval.	11) The vendor will render all necessary help and provide needed documents. The vendor has to provide all supporting documents , site plan , equipment details and drawings to facilitate AERB clearance after completion of the site modification works and installation of the equipment.
44			Siemens	Request you to amend as "AERB clearance shall be the responsibility of the institute after completion of the site modification works and installation of the equipment. The vendor will provide needed documents. "	

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45	Page 60 Para 12	12) Custom clearances if any would be the responsibility of the vendors.	Siemens	Request you to delete this point as custom clearance comes under scope of the institute	line to be deleted. Clause in this regard under GIB & GCC of tender document shall prevail.
46	Page 60 Para 14	14) Future upgradation/ revision of the software versions shall be done by the vendors without any additional cost.	WIPRO GE	14) Future update/ revision of the software versions shall be done by the vendors without any additional cost.	14) Future updates/ revision of the software versions shall be done by the vendors without any additional cost.
47			Siemens	Request you to amend as " All software updates should be provided free of cost."	
48	Page 58 , para 8	Page 58 , 8) Peripherals / Accessories para : b) Latest dual head pressure injector compatible with CT and 100 disposable CT syringes with tubing and connector.:	WIPRO GE	Repeat of 8b. Please remove	line to be deleted : Page 58 , 8) Peripherals / Accessories para : b) Latest dual head pressure injector compatible with CT and 100 disposable CT syringes with tubing and connector.:
49	Page 60 Para 15	15) Automatic syringe less triple-head continuous injector with accessories and disposables for first 500 patients.	Siemens	Request you to delete this point as injector has already been asked under point "8) Peripherals / Accessories sub point b) Latest dual head pressure injector compatible with CT and 100 disposable CT syringes with tubing and connector. "(Page no.58)	15) Automatic syringe-less triple-head continuous injector with accessories and disposables for first 500 patients.
50	Page 60 Para 17	17) Vendor shall be responsible for upgradation of all software to the latest available throughout the warranty period.	WIPRO GE	17) Vendor shall be responsible for update of all software to the latest available throughout the warranty period.	17) Vendor shall be responsible for updates of all software to the latest available throughout the warranty period.
51	Installation Page 60 18)	a) The unit will be installed on site-modification basis. The vendor should inspect the site before quoting and ensure that the unit can be installed in the available space without any functional compromise. Complete layout site map and details of work (BOQ) should be part of technical bid. Provisions should be made for console room, changing room, wash basin, work-station and printer locations. It should also include Lead lined door with lead glass peeping window, radiation warning indicators and signages, Aluminium false ceiling, GVT floor tiles and full height wall tiles. All site-modification should comply with specified standards of the hospital.	Siemens	Request you to amend as " FLOORING WORKS: Supplying and fixing of GVT "600x600 mm to be installed in all rooms. (Kajaria/Nitco/Somani) WALL FINISHING GVT -size 600x600 mm upto false ceiling height to be installed in all rooms. (Kajaria/Nitco/Somani) FALSE CEILING Aluminium grid false ceiling To be installed at site Doors: Door exposed to PET CT Should be Lead lined door with lead glass peeping window, radiation warning indicators and signages to be provided by the vendor Provisions should be made for console room, changing room, wash basin, work-station and printer locations."	scope of work for site modification to be included



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52	18) Installation Page 60	b) Necessary furniture and fixtures for comfortable working conditions, storage of system components and consumable stand for protective aprons and gonad shields. etc. should be provided.	Siemens	Request you to amend as " Following furniture to be provided a) Revolving chairs height adjustable, medium-back with hand-rest – 8 NO.S (Godrej make) c) Cupboard with laminate door shutters for storage of spare parts and accessories and records (300 x 50x40 cm) requirement. – 3 NO.S d) Drug trolleys - 1 NO.S (Janak or eq) e) Patient trolley with rubber foam mattress - 1 NO.S (Janak or eq) f) Name boards for all rooms g) Tables for Workstation and Radiologist - 2 NO.S i) Dustbins: 10 NO.S "	scope of work for site modification to be included

Dr. NADHAVI TEJATHI.

[Signature]

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53			WIPRO GE	Specific quantities to be mentioned	scope of work for site modification to be included
54	18) Installation Page 60	c) Power and Air-conditioning requirement must be mentioned. AC of adequate capacity should be provided. Power supply by the institute will be terminated at existing point. All electrical provisions including earthing etc. will be vendor's responsibility. d) The site should be rendered pest/rodent free.	Siemens	Request you to amend as " ELECTRICAL WORKS: The supplier shall be required to specify the total load requirements for the PET CT Area including the load of air conditioning, room lighting and for the accessories if any. The supply line will be provided by the Institute up to one point within the PET CT area. The distribution panel for UPS, PET CT area shall be provided by the vendor. The electrical work shall include the following: a) Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below. b) Switches light and power points should be of modular type and of standard make as listed below. c) General lights –LED light fittings with minimum 500 Lux Illumination. Four Nos of copper/chemical earthings should be provided for Machine and UPS. Fire detection system – Comprises of fire panel, smoke / heat detectors. 1. Adequate tonnage of Ductable Split Units / Split Air-conditioning with back up that is required for the PET CT Complex has to be installed by the vendor. Humidity control should be effective to eliminate moisture condensation on equipment surface. The outdoor units of AC should have grill coverings to prevent theft and damage. 2. Cabling of Network (LAN) connectivity for camera system, console system, workstation and computers etc 3. The site should be rendered pest/rodent free. "	scope of work for site modification to be included
55			WIPRO GE	Power supply is to be terminated in equipment room in adequate MCCB/incomer.	scope of work for site modification to be included
56		To be added in the tender	Siemens	Request you to specify the scope of site modification work along with layout, air conditioning work and finishes of civil work.	scope of work for site modification to be included

HR. R. R. R.

Dep. Secy. to Govt.

For

for

for

for

	<u>SITE MODIFICATION - PET CT</u>
	<ol style="list-style-type: none"> 1. The vendor should inspect the site at NCI, Jhajjar, before quoting and ensure that the unit can be installed in the available space without any functional compromise. 2. Complete equipment layout site plan and details of work (BOQ) should be part of technical bid. 3. Provisions should be made for placing the various accessories in console room, work-station and printer locations. 4. It should also include Lead lined door with lead glass peeping window, radiation warning indicators and signages, Aluminium false ceiling, GVT floor tiles and full height wall tiles. 5. All site modification works should comply with specified standards of the hospital.
	The SCOPE OF WORK for SITE MODIFICATION OF PET CT SYSTEM shall consist of the following rooms:
a.	PET CT Examination Room
b.	Console room
c.	PET CT equipment / UPS room.
	The area considered for Site Modification for item: PET CT SYSTEM is indicated in the site plan attached as Annexure 1.
1	Civil work
a)	Civil construction work including construction/ modification / demolition of brick wall if any, plastering, flooring as per the approved plan and equipment layout plan.
b)	Additional strengthening of floor / Concrete bed of CT and equipment area, if required
c)	Platform for unloading and shifting the PET CT should be provided if necessary.
d)	Cable tray, trench & channel – necessary trenches, cable tray and channels at required location would be provided.
e)	All the construction work to be done as per the final plan approved by NCI Jhajjar
f)	Ceiling-to-wall ceramic tiling in PET CT examination room.
a)	Flooring
i)	600 x 600 mm glazed vitrified (GVT) tiles with 100mm tile skirting in PET CT Examination room.
ii)	5mm-Vinyl flooring in PET CT equipment / UPS room.
b)	Painting
i)	Two coats Plastic Emulsion Paint over 2 coats of wall putty including primer in Console, PET CT equipment / UPS room.
c)	False Ceiling
i)	Aluminum, acoustical-treated, powder coated tile for ceiling supported on grid or finished seamless with support above ceiling. Ceiling height to suit the equipment mount and clearances.
2	Electrical work
i)	The supplier shall be required to specify the total load requirements for the PET CT including the load of air conditioning , room lighting and for the accessories if any. The supply line will be provided by the Institute up to one point within the PET CT Scan area. The distribution panel for UPS, PET CT shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.
ii)	The electrical work shall include the following:
a.	Wiring – All interior electrical wiring- with main distribution panel board, necessary MCBs, DB, joint box, switch box etc. the wires shall be of copper of different capacity as per the load and should be renowned make as listed below.
b.	Switches light and power points should be of modular type and of standard make as listed below.
c.	General lights –LED light fittings with minimum 500 Lux Illumination

3	AIR CONDITIONING: 15 TR capacity. Unit rate to be quoted.
a)	Duct-able package air conditioners and split air conditioners may be used according to room as well as equipment requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface.
b)	The outdoor units of AC should have grill coverings to prevent theft and damage.
c)	Environment specifications:
i)	Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room, which shall be as per requirement of the equipment?
ii)	Temperature ranges: $22 \pm 2^\circ \text{C}$ in all areas except equipment room which shall be as per requirement of the equipment.
iii)	Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.
4	Fire detection system – shall comprise of fire panel, smoke / heat detectors.
5	Furniture:
a)	Revolving chairs height adjustable, medium-back with hand-rest – 8 NO.S
b)	Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement. – 3 NO.S
c)	Drug trolleys - 1 NO.S
d)	Patient trolley with rubber foam mattress - 1 NO.S
e)	Name boards for all rooms
f)	Tables for Workstation - 5 NO.S
g)	Dustbins: 10 NO.S
h)	All furniture items should be of standard make as mentioned in the table below.
6	Miscellaneous:
a)	Fire extinguisher ABC type- 5kg - 3 no.s
LIST OF ITEMS AND SUGGESTED MANUFACTURERS.	

SL NO	ITEMS	PREFERRED MAKES
A	FLOORING VITRIFIED TILES	-Somany, Kajaria , H&R Johnson, RAK india
B	PAINT	- Dulux, Asian Paints , Nerolac
C	PLUMBING	- Kohler, Jaguar , Grohe , Roca
E	ELECTRICAL	
1	CABLES	- Finolex, Havells ,V-Guard
2	SWITCHES	- Legrand, L&T, Crabtree , Roma
3	DISTRIBUTION BOX , MCB	- Legrand, L&T, Siemens, Havels
4	LIGHT FITTINGS	- Philips / Crompton / Wipro/Syska
F	AIR CONDINTIONING	- Daikin, Hitachi, Blue Star, Voltas,
G	FURNITURE	- Hermen Miller , Godrej , Featherlite,Geeken.