Appendix-1K (i)

Sl. No.	Name of the Equipment	Is available in PET (100 bedded)	QR's available or not
1.	HEIGHT WEIGHT MACHINE COMPLETE SET (DIGITAL COMBINED HEIGHT AND WEIGHT MACHINE)	YES, SL. NO.1437	YES
2.	CENTRIUGE MACHINE (CENTRIFUGE ELECTRIC COMPLETE WITH CENTRIFUGE TUBE)	YES, SL. NO. 1549	YES
3.	BINOCULAR SELF ILLUMINATED COMPOUND MICROSCOPE	YES, SL. NO. 1550	YES
4.	DIGITAL GLUCOMETER (GLUCOMETER WITH STRIP)	YES, SL. NO. 1620	YES
5.	SEMIAUTOMATIC BIOCHEMISTRY ANALYSER	YES, SL. NO. 1625	YES
6.	FULLY AUTOMATED ELISA/ IMMUNOASSAY ANALYSER (FULLY AUTOMATED ELISA READER AND WASHER)	YES, SL. NO. 1629	YES
7.	BLOOD GAS ANALYSER	YES, SL. NO. 1626, 793	YES
8.	HAEMATOLOGY ANALYSER (Blood cell counter) THREE DIFFERENTIAL PARAMETERS	YES, SL. NO. 1601	YES
9.	5 DIFFERENTIAL HAEMATOLOGY ANALYSER - AUTOMATED BLOOD CELL COUNTER	YES, SL. NO. 1604	YES
10.	TRINOCULAR MICROSCOPE WITH CAMERA AND SCREEN	YES, SL. NO. 1532	YES
11.	ELISA READER WITH WASHER COMPLETE (SEMI AUTOMATED ELISA READER WITH WASHER)	YES, SL. NO. 1552	YES
12.	AUTOMATED GLYCOSYLATED HEMOGLOBIN TESTING SYSTEM	YES, SL. NO. 1610	YES
13.	AUTOCLAVE (HORIZONTAL AUTOCLAVE)	YES, SL. NO. 1582	YES
14.	AUTOMATED SERUM ELECTROLYTE ANALYSER	YES, SL. NO. 1627	YES
15.	HPLC - HIGH PRESSURE LIQUID CHROMATOGRAPHY- Hb ESTIMATION SYSTEM (FULLY AUTOMATED THALASSEMIA HAEMOGLOBINOPATHY AND GLYCOSYLATED HAEMOGLOBIN SCREENING SYSTEM BASED ON HPLC TECHNOLOGY)	YES, SL. NO. 1611	YES
16.	FULLY AUTOMATED BIOCHEMISTRY ANALYSER	YES, SL. NO. 1624	YES
17.	ECI (ENHANCED CHEMILUMINESCENCE) – IMMUNODIAGNOSTIC SYSTEM (FULLY AUTOMATED CLIA ANALYSER)	YES, SL. NO. 1556	YES
18.	URINOMETER AUTOMATIC (URINE ANA LYSER)	YES, SL. NO. 1534	YES

Recommendation of ADG(Med)

Appendix-2K (i)

S. No.	Name of the Equipment	Is available in PET (100 bedded)	QR's available or not
1.	FLUORESCENCE IMMUNOASSAY ANALYSER	NO	NOT FOUND
2.	FULLY AUTOMATED ANALYZER FOR MULTIPLE ALLERGENS	NO	NOT FOUND

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG (Med)

Appendix-2K (ii)

QRS/SPECIFICATIONS AND TRIAL DIRECTIVES

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
01	HEIGHT WEIGHT MACHINE COMPLETE SET (DIGITAL COMBINED HEIGHT AND WEIGHT MACHINE)	**SPECIFICATIONS** 1. Weighing capacity upto 150 Kg in step of 100g. 2. Weight graduations should be 0.1Kg. 3. Should be equipped with height rod. 4. Should measure upto 200 cm in steps of 1mm 5. LCD Display. 6. Should have circular/rectangular weighing platform 7. Issue a print slip. 8. Thermal printer with auto cutter. **STANDARD, SAFETY AND TRAINING :** 1. Should have the ISO 13485 certification and the copy of the same should be enclosed along with the technical bid.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard.	As per specifications
2.	CENTRIUGE MACHINE (CENTRIFUGE ELECTRIC COMPLETE WITH CENTRIFUGE TUBE)	**SPECIFICATIONS:-** 1. Should be Microprocessor Controlled with large LC Display of time, speed and temperature with digitally controlled buttons, dynamic brakes, step less speed regular with zero start switch and speed indicator with timer and protected fuses. 2. Programmable speed with separate short spin key (in seconds). 3. Brushless maintenance free motor drive with low noise levels less than 60 db at Max speed. 4. Automatic rotor recognition and automatic imbalance detection. 5. Double lid locking system for maximum safety. 6. Maximum speed 3500-4800 rpm with maximum RCF 3000-4000 g with speed/RCF increment in steps of 1,000 or less. 7. Wide temperature range of -150C to +40 C and must be able to maintain 40 C at Max speed. 8. Fixed Angle Rotor accommodating 24 x 3.0 to 5.0 ml conical reaction tubes, incl. polysulfonelide.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard.	As per specifications

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG(Med)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		9. Also supply Fixed Angle Rotor made of polypropylene for12 x 1.5/2.0 ml conical reaction tubes, incl. Polysulfonelide. 10. Adapters for 0.2 ml PCR reaction tubes/ aliquots to be supplied. 11. Rotor and Chamber should be made of chemical resistant and rust free material. 12. Suitable constant power supply backup/inbuilt battery **STANDARD, SAFETY AND TRAINING :** 1. Machine should be EN-61010-2-020 certified & CE marked, certified bio containment lid for safety purpose. 2. At least 3 years' warranty and on-site repair free of cost.		Recommendation of AQ(Med)
3	BINOCULAR SELF ILLUMINATED COMPOUND MICROSCOPE	**SPECIFICATIONS:-** 1. Body: Binocular, sturdy, stable base body with focus adjustment controls. 2. Eye piece: Paired, high quality, (the image of the object as seen through the binocular eyepiece should be well defined centrally in at least 2/3 field of view), achromatic, wide field, 10x with inbuilt pointer. The eyepiece should be aplanatic and have a minimum field number of 18 Dioptre adjustment must be present on one/ both eye pieces or on the eye piece tube. 3. Optical system should be infinity corrected. 4. System complete with illumination system is required. 5. Objective: Four objectives 4x, 10x, 40x, 100x. a. 10x and 40x objectives should have numerical aperturesof0.25 and 0.65 respectively and should be of spring loaded type or otherwise. b. 100x should have numerical aperture of 1.25 and should be of oil immersion and spring loaded type. Suitable prominent marking should be provided on100x for easy identification. Unbreakable containers to be provided for storing the objectives. All objectives should be wide field, antifungus plan acromatic objectives and parafocal.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		6. Making for the Objectives :Each objective should be engraved with the following information's:- a. Name of the manufacturer b. Magnification and numerical aperture, for example,10x/0.25 c. 100x objective should be engraved with the word 'Oil' in changing from one objective to another or reintroducing the same objective by rotation of the nosepiece, the object at the centre of the field should not appear displaced by more than 0.02 mm in the object plane in any direction. 7. Nose piece: Revolving nose piece to accommodate a minimum of three objectives with click stops. It should be provided with ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any should be fitted with dust proof metallic/ebonite caps. 8. Stage uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine vermier graduations (minimum reading accuracy of 0.1 mm). The stage should be provided with spring loaded slide holder for exact positioning of specimen/ slide. It should be designed with convenient sub-stage vertical co- axial adjustment for slide manipulation. The stage should have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/-5mm) and front to back direction, 50mm (+/- 5mm). 9. Sub-stage condenser: Abbe-type condenser, numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating an spherical lens and an iris-diaphragm. The condenser should have a filter holder and removable/ swing in/ out blue filter (suitable for bright field Microscopy). 10. Sub-stage illuminator: 11. The system should have a build-in variable light source (Illuminator). This light source should have a 20 W, 6 V Halogen lamp/LED light. The circuitry for the light source should include a constant voltage supply.		

Recommendation of ADG(Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		12. The system should be provided with a step down transformer and an on-off switch and intensity control. The lamp should be provided with a lamp socket which has the facility for easy replacement of the bulb, a. Power supply: Voltage 220 V AC, 50Hz. should have one on-off power switch, 3 core power cord with a 3 point male plug. b. The system should have an inbuilt protective/ safety device to withstand fluctuations of voltage from 140 V to 280V. c. A plano-concave mirror in fork mounting should be supplied which would be attachable to the base for field use when power is not available. d. The fuse for the light source should be easily accessible to the operator e. The Illuminator should have a build-in field diaphragm for Kohler illumination. f. Eye piece tubes: Binocular eye piece tubes, inclined at 45 degrees, rotatable through an angle of 360 degrees, having inter-pupillary distance range of 54-74 mm or wider, covering the above mentioned range. g. Focusing knob: Co-axial coarse and fine focusing knobs capable of smooth fine focusing movement over the full range of coarse travel. The fine focusing movement should have sensitivity of two microns or less (finer) over the entire coarse focusing stop safety arrangement should be provided. 13. All optical parts including objectives, eye pieces and prisms should have anti-reflective coating which also gives anti-fungal property. 14. All metallic parts should be corrosion-proof, acid- proof and stain-proof. 15. Working manual should be provided with each microscope.		

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Recommendation of ADG(Med)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		16. A bottle of at least 25 ml immersion oil, a roll of lens tissue paper and lens cleaning solution (100 ml) should be provided with each microscope. 17. One antistatic cleaning brush should be provided with each Microscope for cleaning purpose. **STANDARD, SAFETY AND TRAINING :-** 1. Microscope should be supplied with all spare parts including Fuses – 6Nos. 2. All consumables required for installation and standardization of system and microscope cover to be given free of cost. 3. The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of15-90%. 4. Should be FDA or CE or ISI approved product. 5. Three years warranty, 5 yrs comprehensive AMC should be available with service centres in close proximity. 6. User/Technical/Maintenance manuals to be supplied. 7. Certificate of calibration and inspection from factory. 8. List of important spare parts and accessories with their part number and costing. 9. At least 3 years' on-site warranty and repair free of cost.		Recommendation of ADG(Med)
4.	DIGITAL GLUCOMETER (GLUCOMETER WITH STRIP)	**SPECIFICATIONS:-** 1. Minimum analytical Range: 20-600 in mg/dl 2. Accuracy: as per international standard ISO 15197-requirement for blood glucose monitoring system for self testing in managing diabetes mellitus. 3. Reproducibility / precision: +/_5%. 4. Display should be 48mm measured diagonally. 5. Battery operated electronic system. 6. Shelf life of strips: 12 months at the time of delivery to consignee. 7. Packing of Strips: not more than 50 strips in a pack. Strips should work till the date of expiry written over pack even if vial is opened. If strips got expired then firm will be replaced the same till the expiry written over the pack even if vial is opened.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		8. Control solution of checking reliability of Strips will be supplied at free of cost as& when required. 9. Ready availability of reagent test strip, battery & other consumables across India for at least 5 years. 10. Package should include:- a. Glucometer b. Minimum 100 single use auto disabled lancets c. Test strips -100nos. d. Carrying Case -1 nos. e. instruction manual f. Standard Batteries-Qty02Set g. QC & Calibration kits. 11. The Unit should be capable of being stored continuously in ambient temperature of 0° to 50° Celsius 12. Operating continuously in ambient temperature of upto 45 degree Celsius. 13. Li-ion battery operated system. 14. Manufacturer should be ISO certified for quality Glucometer should have ISO 15197:2013/EN ISO15197:2015. 15. Audio Visual Training to be provided at places as mentioned in bid document. 16. User and technical Manual with troubleshooting guide with Customer Care Numbers to be supplied in English and Hindi. 17. Certified or Calibration and Inspection from factory. 18. May be considering as battery shall be provided free of cost 2 times in a year 19. Glucometer should have capillary, Venous, Blood Testing. 20. Warranty- Free replacement for at least 3 years in case of any defect in instrument and the same should be replaced within 15 days of intimation or non-functioning unit receipt. 21. All software update shall be provided free of cost during warranty period.		

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG(MED)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		22. Should be able to connect through hardware for fetching data. 23. Dosing Area of strips should be at least 1mm X 1mm (for capillary suction for blood). 24. Measuringtimeshouldnotbemorethan5secondfromthetimeofthetest conducted. 25. Auto Disable Lancets should be Sterile. 26. Glucometer should not be required coding (Code free Glucometer) **STANDARD, SAFETY AND TRAINING :-** 1. Manufacturer should have ISO certification 2. Product should be CE/US FDA/BIS certified		
5.	SEMIAUTOMATIC BIOCHEMISTRY ANALYSER	**SPECIFICATIONS:-** 1. Semi automated biochemistry Analyzer should be Microprocessor based to perform routine Biochemistry tests (end point, fixed time & kinetic chemistries, multi standard curve calibration & memorization) etc. 2. Analyzer should offer minimum of 50 or more user definable programmable parameters. 3. Analyzer should have facility to select at least 20 tests directly through keypad or direct access or customized menu based on parameter menu numbers. 4. Analyzer should have temperature range to perform all Bio-chemistry tests. 5. Analyzer should have quartz flow cell with capacity of 32 µl or less. 6. Absorbance range should be 0- 2.5 Abs. Higher values of absorbance up to 3.0 acceptable. Resolution 0.001 Abs. 7. Analyzer should be able to perform non-linear/multipoint calibration up to 6standards 8. The unit should have filter capable of performing all routine tests Biochemistry test including endpoint, kinematics and Enzymatic tests.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADSC(MED)

Appendix-2K (ix)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		9. The supplied unit shall have Six filters covering all the biochemistry panel and including one differential filter. 10. Analyzer should have inbuilt facility to display graph, test result &change in absorbance. The supplied equipment shall have printer (internal/external) available with the Unit. 11. The firm quoting for the semi auto analyzer should provide at least 10 tube external/ internal incubator with the unit. It should be either attachable or able to connect with UPS. 12. The minimum aspiration volume at which the equipment is able to analyze should not be more than 250 µl. 13. Analyzer should have facility to store at least 100 tests results in the memory and can recall stored tests results with patient ID or with date or with date & patient ID. 14. Analyzer should have full-fledged QC menu to give daily & monthly QC with Levy Jennings graphs for two controls per test and system for linearity check. 15. Analyzer should have USB/Serial port facility to transfer test result from the analyzer directly to PC and as well as to an external printer, Optional External Keyboard attachment. 16. Analyzer should have provisions for lamp voltage check in service mode or displayed when the analyzer is switched ON. 17. There should be pre test /self check facility with the analyzer. 18. Sample carry over shall not be more than 0.5% 19. Company should have provided installation certificate, calibration certificate, validation certificate,& performance certificate. 20. Company should provide Hard & Soft copies of Manuals & Literature of the Equipment. 21. For- installation reagent, Controls and Calibrators should be provided by the company. 22. Linearity should be specified for every parameter and procedure followed should be specified. 23. Company should have a dedicated service station.		

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADS(Med)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		24. The Equipment should have facility to connect External Keyboard & Laser Printer by USB/Serial port. 25. The unit should have the following standard accessories to be supplied with the unit. a. 0.5 KVA offline UPS With 30 min. backup of standard make b. Micropipette: i. 5-50 µl 01 nos. ii. 50-200n µl 01 nos. iii. 100-1000 µl 01 nos. c. 1000 nos. tips of suitable capacity to be supplied with micropipettes. d. The unit should be supplied with basic starter kit of 500 test each of Sugar, Cholesterol, Triglycerides, Urea, Creatinine, SGOT, SGPT, ALP, HDL, BIT, BID, Uric Acid, Amylase. **e.** Three nos of PM Kit will be supplied along with each unit. **STANDARD, SAFETY AND TRAINING :-** 1. The system should be US FDA or European CE approved. 2. At least 3 years' warranty and 3 years post-warranty CAMC terms.		
6.	FULLY AUTOMATED ELISA/ IMMUNOASSAY ANALYSER (FULLY AUTOMATED ELISA READER AND WASHER)	**SPECIFICATIONS:-** **ELISA READER:** 1. Should be fully automatic, able to support all plate formats U bottom, V bottom and flat bottom 96-well micro plates. 2. PC based system. 3. Optical systems: LED lamp/ UV Xenon flash lamp. 4. Detection: Absorbance based. 5. Reading Time: <15 Seconds for 96-wells. 6. Wavelength range: 340nm to 750nm or more 7. Wave length selection should be double monochromatic with 1nm increment	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG (Med)

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		8. System should have capability to do qualitative, quantitative, kinetics with any formulae including validation, transformation, and factors and floating cut off. 9. Absorbance Range: 0 - 4 OD 10. Resolution: 0.001 Abs. 11. Accuracy: 1% +/- 0.010 OD 12. Repeatability: 0.5% + -0.005 OD 13. System should perform self-check before every measurement 14. Power requirements: 220V-50/60Hz 15. PC Requirements(All in one PC) : Intel core i7 processor, 4 GB RAM, 2 GB graphic, 1 TB hard disc, Full HD LED monitor 17", DVD writer, Wi-Fi, Wireless key board and mouse, 64 bit and latest version of Microsoft Window, with MS office licensed, Laser Printer, (>20pages/min.)>5000pages/refilling of cartridge 16. Inbuilt shaking mode. 17. PC Software packages (windows ® compatible) for on board data analysis. **ELISA WASHER:-** 1. Fully automatic plate washer. 2. Programmable. 3. Alarm for monitoring the overflow and wash solution. 4. Dispensing and aspirating needles should be separate 5. Washer should have 8 or 12 channel wash head 6. Should have 2-4 independent liquid channels 7. Wash volume per well should be programmable 8. Should have residual volume of <2ml 9. Should have strip selection option which allows to wash selected strips only 10. The supplier should provide comprehensive training to users on operation of the instrument and application support onsite as per specifications 11. Branded compatible online UPS with at least30 minutes backup	Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications Recommendation of ADG(MED)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

SL. NO.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		12. Calibration according to NIST/ DKD/PTB/UKAS/NPL/UL/CUL listed **STANDARD, SAFETY AND TRAINING :-** 1. Should have the ISO certification and the copy of the same should be enclosed along with the technical bid. 2. At least 3 years' warranty and 5 years post-warranty CAMC terms.		
7.	BLOOD GAS ANALYSER	**SPECIFICATIONS:-** 1. The system is required to analyse blood gases in arterial and venous blood at bed side. 2. It should provide the readings of pH, pO2, pCO2, TCO2, HCO3, base excess, sodium, potassium and haematocrit. 3. The system should be able to report the values accurately in the range – pH (6.5-8.0), pO2 (40-400 mmHg), pCO2 (10-100 mmHg), HCO3 (5-70 mmol/L), base excess (-25 to +25 mmol/L), sodium (110-170 mmol/L), potassium (2-8mmol/L) and haematocrit (20-60%) and other parameters at acceptable range. 4. The process time should be < 5minutes 5. The system should preferably have facility for wireless transfer of reports to the hospital information system. 6. The system should be supplied along with inbuilt printer. 7. The system should be factory calibrated. The supplier should perform quarterly calibration, to maintain accuracy of the system. 8. It should have provision to be battery operated. 9. At least 2 years' warranty and 3 years post-warranty CAMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. It should be US FDA/ European CE certified. 2. It should function at temperature range 15oC to50oC. 3. Manufacturer should have ISO 9001:2008certification. 4. Analyzer should comply with IVD Medical Device Directive 98/79/EC.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications. As per specifications

Recommendation of ADs (Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Appendix-2K (xiii)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
8.	HAEMATOLOGY ANALYSER (Blood cell counter) THREE DIFFERENTIAL PARAMETERS	**SPECIFICATIONS:-** 1. Fully Automated Haematology Analyzer with Three Part Differential reporting minimum 18 parameters in whole blood mode namely, HGB, RBC, HCT, MCV, MCH, MCHC, RDW-CV/SD, WBC, Ly%, Ly, Mid%, Mid, Gran/Neut%, Gran/Neut, PLT, PCT, PDW-CV/SD,MPV. 2. Minimum 8 parameters in pre-dilute mode namely, HGB, RBC, HCT, MCV, MCH, MCHC, WBC,PLT. 3. At least 3 histograms namely, WBC, RBC and PLT and should display warning flags for abnormal results. 4. Impedance method for WBC, RBC and PLT counting and sizing; photometric estimation of HGB by non-cyanide method. 5. The instrument should be software driven for future upgradability. 6. Should be capable of both closed and open vial sampling. 7. Should have sample volume aspiration of equal or less than 50 µl in whole blood modeandequalorlessthan25µlinpre-dilutemode. 8. Should have capillary mode with automatic diluent dispense for finger prick samples. 9. Throughput should be minimum 40 samples per hour and results should be displayed in less than 60seconds. 10. Should have automated probe wipe mechanism. 11. Should be operated through user friendly touch screen. 12. All results should be displayed on single screen and printable automatically or optionally with inbuilt printer including the institutional header. 13. Capability of automatic extended counting for cytopenic samples and of extended platelet counting. 14. Should have Patient ID auto-numbering and manual numbering of at least 14 digits. 15. Should have option for at least 3 user definable reference ranges for reporting of results.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications.

Recommendation of ADG(Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		16. There should be system alerts for reagent empty and waste full. 17. Should have data storage facility of at least 250 sample results. 18. Should have on board quality assurance and quality control programs like Levey Jennings charts and QC storage for 3 controls and at least 250 QC results. 19. Linearity for all basic parameters like HGB, WBCs, RBCs, and Platelet should start from zero. 20. Precision (CV) values for various Haematologic parameters measured should match ICSH guidelines. 21. The instrument should have an option for RS232 interface port and integration with LAN for intranet/internet. 22. The instrument should have at least 200 installations in NABL accredited laboratories. 23. The instrument should be CE marked/ FDA (US) approved. 24. The instrument if needed should be available for demonstration. 25. Document supporting track record and satisfactory performance from institutes of national importance (minimum one) should be provided. 26. Appropriate workbench/ stand should be provided with the instrument. 27. The system should have LIS capability. 28. To be supplied with computer (minimum i5 processor, 1 TB HDD and 8 GB RAM), A4 size laser printer and appropriate bar code reader. 29. Start-up kit for at least 100 tests should be provided free of cost. 30. UPS back up for the duration of one cycle of processing to be provided.		Recommendation of ADG(Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		STANDARD, SAFETY AND TRAINING :- 1. Support for induction and follow up training of technical staff, on-site standardization and troubleshooting of procedures/ tests to be provided by the company. 2. At least 2 years' warranty and 3 years post-warranty CAMC terms.		
9	5 DIFFERENTIAL HAEMATOLOGY ANALYSER - AUTOMATED BLOOD CELL COUNTER	**SPECIFICATIONS:-** 1. The instrument should be fully automated fluorescence flow cytometry based 5-part differential haematology analyzer offering automatic start-up, shutdown and sample-analysis. 2. The instrument should have random access discrete analysis modes for a) CBC, CBC+DIFFERENTIAL+ IG. 3. The instrument should have 24 parameters reported with two histograms - RBC, PLT and one scattergram: WBC, RBC, HGB, HCT, MCV, MCH, MCHC,RDW-SD, RDW-CV , PLT, NEUT %, LYMPH %, MONO%, EOS %, BASO %, NEUT #, LYMPH #, MONO #, EOS #, BASO #, PDW, MPV, PCT, P-LCR, IG #, IG% 4. The instrument should have throughput of at least 40 samples per hour in both the discrete analysis modes. 5. The sample aspiration volume for the complete differential blood count should not be more than 50 µL 6. The instrument should have the following analysis modes, Manual - Open, Capillary mode and Sampler mode 7. The instrument should have Hydrodynamic focusing / impedance method for RBC/PLT channel 8. The instrument should have Cyanide free Sls-HB /colorimetric method for the haemoglobin measurement 9. The instrument should be equipped with Fluorescence based semiconductor laser fluorescence flow cytometry for Differential channel. 10. Instrument should be able to enumerate immature granulocytes	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications. Recommendation of ADG (Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		11. Instrument should be equipped with automatic rerun/reflex modes 12. Instrument should have facility for up gradation with additional clinical parameters like reticulocytes, immature platelet fraction etc. 13. Analyser must have option to enumerate differentials for body fluid samples. 14. Instrument should have options for autosampler & integrated barcode reader. 15. The instrument should have comprehensive information processing system with i) User-friendly Windows XP/ 7 based software., ii) 100000 sample data with histogram and scattergrams storage, iii) 99 QC files each with 300 points for QC can be stored. 16. The instrument should be extensive QC features: i) Min one file for X bar M, ii) Delta checks available for cumulative review, iii) Option for online QC also available. 17. It should have high linearity of over 4 lacs/ µL for WBC's, over 40 lacs/ µL for Platelets 18. At least 3 years' warranty and 5 years post-warranty CAMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. Provision to demonstration before final approval of the equipment 2. Equipment should be USA-FDA/ European CE approved. Documents supporting tract record and satisfactory performance from institution of national importance(minimum one) should be provided.		Recommendation of ADG(Med)
10.	TRINOCULAR MICROSCOPE WITH CAMERA AND SCREEN	**SPECIFICATIONS:-** 1. MICROSCOPE FRAME: a. Optical System: UIS2 Optical system, Infinity corrected, bright field, phase contrast and polarization microscopy	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		b. Focus i. Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, ii. Torque adjustment for coarse adjustment knobs, Stage mounting position variable, iii. High sensitivity fine of focusing knob (minimum adjustment gradations: I pm) iv. Rotation of 270 degree with stage locks and stage tension adjustment. c. Illuminator a. Built- in Koehler illumination for transmitted light, pre centered, b. High color reproductively 2 W LED light source. c. Light intensity manager switch to side or centrally 2. REVOLVING NOSEPIECE : Interchangeable reversed quintuple/ coded quintuple/ sextuple/ septuple/ coded sextuple nosepiece for auto light adjustment and toggling facility. 3. OBSERVATION TUBE : a. Super Widefield (FN26.5): - Super wide field trinocular, Super Wide field erect image tilting trinocular. 4. STAGE : 5. Ceramic coated coaxial stage with left of right-hand low drive control: with rotating mechanism and torque mechanism, optional rubber grips available (Non-stick grooved coaxial, plain, rotatable stages are also available), low drive control with X and Y axis tension adjustment.	Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications Recommend-ation of ADG(med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		6. CONDENSER :- a. Abbe (NA 1.1), for 4X100X Swing out Achromatic (NA 0.9), for 1.25X100X (Swing - out: 1.25X4X) Achromatic Aplanatic (NA 1.4), for 10X100X Phase contrast, darkfield (NA 1.1), [phase contrast : for 10X-100X, darkfield : for 10X-100X(up to NA 0.80)] Universal (NA 0.99), for 1.25X 100X [swing -out: 1.25X4X, with Oil top lens: (NA 1.4)] Low (NA 0.75), for 2X100X(Dry) Ultra low (NA 1.16), for 1.25X4X Darkfield dry (NA 0.8-0.92), for 10X-100X Darkfield Oil (NA 1.30-1.40), for 10X-100 b. Polarizer adaptor and lens 7. OBJECTIVES: Plan 2.25x, 4x, 10x, 20x (optional), 40x, 100x oil. Anti-fungal treated. 8. UPGRADATION : Upgradation to fluorescence should be possible 9. ACCESSORIES: Power cable, microscope cover, oil bottle, cleaning cloth, attachment for camera. 10. DIGITAL CAMERA: a. At least 5 MP color CMOS WIFI camera, b. Image Sensor Color CMOS Sensor Size 1/2 inch (7.140 x 4.980 mm) at least. c. Max. Resolution 2592 * 1944 pixels (Snap Shot), Pixel Size 2.4 x 2.4 mp at least, AD Converter (Bit Depth)8 bit d. Exposure Time From 1 ms to 980 msec, **e.** Live Frame Rates at least 30 fps at 1920 x 1080 pixels (@ full resolution), at least 60 fps HDMI Output at 1,920 * 1,080pixels, at least 20 fps WLAN Output at 1920 x 1080 pixels, Snap Shot only fps at least 2,592 x 1944 pixels		Recommendation of AFMS(med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		f. Data Transfer HDMI, WLAN (In use of WLAN Adapter), Ethernet (In use of USB -to-Ethernet adapter), g. Storage SD Card. h. Compatible with PC control and latest windows operating system. 50-inch monitor, 8GB Ram, 1TB hard disc, i5 processor (at least). 11. C MOUNT ADAPTOR: C mount adaptor and video port analyser. **STANDARD, SAFETY AND TRAINING :-** 1. Provision to demonstration before final approval of the equipment 2. Equipment should be USA-FDA/ European CE approved. 3. Documents supporting tract record and satisfactory performance from institution of national importance(minimum one) should be provided. 4. 5-year free service and repair on-site.		Recommendation of ADG(med)
11.	ELISA READER WITH WASHER COMPLETE (SEMI AUTOMATED ELISA READER WITH WASHER)	**SPECIFICATIONS:-** 1. Microtitre plate: Any format 2. Wavelength range: 400-900nm. 3. Light source: Tungsten halogen lamp (6V10W) Average life span≥5000h 4. Detector: silicone photo detector 5. Photometric range/method: 0.0-4.0 OD/ Single and dual wavelength 6. Linearity: 1.0% 7. Accuracy: ≤1.0 % or 0.010 from 0.000–3.000 OD at 490nm. 8. Precision:1.0% or 0.005 OD from 0.0 –2.0 OD; 1.5% from 2.0–3.0 OD 9. Resolution - 0.001 OD 10. Filter wheel capacity: 5; It must include four Filters of 405, 450, 490, 630nm. 11. Plate shaking (3speeds): Low, mid, high	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		12. Read time: 8 sec (Maximum) at single wavelength, 12 sec (Maximum) at dual wavelengths 13. Data output: To external printer. 14. OnboardgraphicalthermalprinterandUSB2interface 15. Data storage: Calendar/ clock functions; more than 50assay protocols 16. Printer: Built-in. 17. Power supply: AC220V±22v, 50Hz 18. Washer should regulate in the position of cleaning head according to user requirements. Can choose to set washing parameters for different effects. 19. Capable to handle 1 x 8 / 1 x 12 strips. 20. Wash volume ranging from 50-3000 ul per well. 21. Vacuum aspiration, programmable height, speed and positions with a memory of more than 70 programme. It should include tubings and bottles for buffer and waste. 22. At least 2 years' warranty and 3 years post-warranty CAMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. CE certified. 2. All technical specification will be evaluated with on site demonstration of the equipment.		Recommendation of ADG(med)
12.	AUTOMATED GLYCOSYLATED HEMOGLOBIN TESTING SYSTEM	**SPECIFICATIONS:-** 1. Machine should be compact, portable, cartridge based and useful to measure Hemoglobin A1c by Boronate affinity technique. 2. Sample requirement should be less than 5µl whole blood .Processing time should not be more than five min per sample. 3. Linearity range should at least be 4-14% of HbA1c. 4. Should have selectable dual reporting of result. User can select from % HbA1c, IFCC mmol/mol, eAG mg/dl or eAGmmol/l.	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		5. Should be functional at temperature range of 20-30 degree Celsius (at least) 6. Should have memory of at least 5000 test results. 7. Machine should operate at least in the electricity supply range of AC 110 V to 220 V 50-60Hz. 8. Should have barcode reader to scan calibration data, patient and operator ID. 9. Should have in-built printing system. 10. Machine should be supplied with at least 100 cartridges and 10 rolls of papers for printing. 11. Should be provided with 2 yrs' warranty and three years' post-warranty CMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. Manufacture should have ISO certification. 2. Product should be CE/US FDA / BIS certified. 3. The company should have a dedicated team to provide relevant product related technical support. 4. The company should also have a team of well-trained engineers who can provide the instrument service and maintenance support. 5. The company should have >100 installations across major cities all over the country.	Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications Recommend-ation of ADG (Cyber)
13.	AUTOCLAVE (HORIZONTAL AUTOCLAVE)	**SPECIFICATIONS:-** 1. Stainless Steel of SS-304 grade. 2. Triple walled with a steel jacket. 3. Jacket and boiler should be made of stainless steel. 4. Low Water cut off. 5. Auto safety door lock. 6. Mounted on rigid tabular stand. 7. Spring loaded safety valve of stainless steel. 8. Inner dimensions of chamber: (approx.) cylindrical 600mm diameter x1100mm deep, 9KW (approx.). 9. Electrically heated. 10. Working pressure: 1.2-1.5kg/sq.cm	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		1. The pressure is adjustable from 5 psi to 20 psi with automatic pressure controls witch, which controls the pressure with an accuracy of+/-1psi. 2. There should be provision for vaccum for drying of racks and porous loads. 3. Automatic Pressure Control Switch- To cut-off the current from the heating elements, when the desired/ set pressure value level is attained inside the chamber and restarts the mechanism once the pressure inside the chamber falls from the desired level. 4. Automatic Water Cut-off Device: To ensure that the machines automatically switched off in case the desired water level falls below the prescribed level. 5. Temperature Indicator to indicate the temperature inside the chamber. 6. Timer with Alarm System - To regulate the sterilization time of the media to be sterilized and when the desired time is passed, with a buzzer, to that the completion of sterilization cycle. 7. Product should have ISO and CE/USFDA certification. 8. Should be a fully automatic Dual PLC microprocessor based High pressure, high vacuum autoclave for sterilizing hospital materials including agars, sterilization of solution in open & closed bottles, disinfection of materials and waste decontamination. 9. Should be front loading, have Rectangular, horizontal chamber with well-insulated jacket, chamber volume 450 litre or more. Approx. Internal chamber dimension: 700 x 650 x 990 mm approx. (WxHxD)/ External dimension: 1900 x 1300 X 1300 mm approx. (WxHxD) (at least). 10. Should have single vertical sliding door to have a pass through system. Door should be electrically controlled having fully automatic function with multiple safety arrangements. Sealing system should be based on silicon seal. 11. Should have at least 50mm thick insulation material on jacket and doors to ensure low thermal losses. Working temperature of the door should be lessthan45degC.		

Recommend-ation of ADHs (med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		12. Should have a built in colour touch screen of size minimum 7.0" user's interface cum Display for control & display sterilization cycle, parameter values, clear text message and alarm history preview etc. 13. Should have audio-visual alarm in case of undesirable situation. 14. Should have programmable Operator's access level. 15. Should have at least 8 pre-programmed standard cycles plus 5 or more user programmable cycles and provision of chip card port for loading of new programs through chipcard. 16. Should have temperature adjustable from 1210° C to 1350° C. 17. Safe working pressure range should be 15 to 32 PSI (1.1bar–2.2bar) 18. Should have complete monitoring of cycle operation and provided with at least two pressure sensors and two Temp. Sensors (PT-100 type) in addition to analog for chamber pressure, jacket pressure and steam generator pressure indication. 19. The unit should be equipped with multiple safety mechanisms for Emergency Stop over. Pressure safety valves for chamber and jacket, over temp safety, steam traps and electrical safety. 20. Should have maintenance menu for quick trouble shooting by touch screen. 21. Should be offered complete with digital interface facility and software for remote supervision & data storage with provision to enable user make modification of already programmed sterilization programs. Installation should be on turnkey basis following will be the terms and conditions: a. Only water, electricity and drain outlet will be provided by the department within the room of installation. The supplier shall be responsible for arranging rest of the things for installation and smooth functioning of the equipment on a turnkey basis. b. Following shall be provided by the supplier along with machine: **STANDARD, SAFETY AND TRAINING :-** 1. Manufacture should have ISO certification. 2. Product should be CE/US FDA / BIS certified.	Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications Recommendation of ADG (med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Appendix-2K (xxiv)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
14.	AUTOMATED SERUM ELECTROLYTE ANALYSER	**SPECIFICATIONS:-** 1. Should be able to measure sodium, potassium, ionized calcium, chloride and lithium. 2. Should have a measuring method of Ion Selective Electrode (ISE). 3. Should have separate electrode for sodium, potassium, calcium, ionized calcium and lithium. 4. Should have a throughput of minimum 30 samples per hour with print outs. 5. Analysis time should be less than 90 seconds. 6. Resolutionshouldbeatleast0.1mmol/litre for each parameter 7. Should have automatic calibration 8. Samplesizeshouldbelessthan100microlitre 9. Itshouldhaveonlyonereagentmoduleforallstandardsandwashsolutionsandwastealsoshouldbe collected in the same module 10. Itshouldhaveonlyonecleaningreagentsforelectrodesanddailymaintenance 11. Should have printing facility. 12. Should supply reagent pack for 1000 tests, Internal filing solution, cleaning solution and quality control. 13. Should have an alphanumeric digital display. 14. Should work on 110-220V AC 50-60Hz power supply 15. Should be supplied with offline pure sine wave UPS of sufficient capacity for a minimum back up of 60 minutes. 16. Shouldbeprovidedwithcalibrationcertificateissuedbythemanufactureratthetimeof installation and calibration certificate should be issued for the machinebythesupplierduringpreventivemaintenancevisitinthewarranty/AMCperiodifdemandedbytheenduser. 17. Should have CE/FDA(US)/BIS certificate 18. Warranty and CMC: At least 2 years' warranty and 3 years post-warranty CAMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. Manufacture should have latest ISO certification. 2. Product should be CE/US FDA / BIS certified.	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications. Recommendation of ADG (med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
15.	HPLC - HIGH PRESSURE LIQUID CHROMATOGRAPHY- Hb ESTIMATION SYSTEM (FULLY AUTOMATED THALASSEMIA HAEMOGLOBINOPATHY AND GLYCOSYLATED HAEMOGLOBIN SCREENING SYSTEM BASED ON HPLC TECHNOLOGY)	**SPECIFICATIONS:-** 1. Automated, Integrated system, dedicated to HbA1c, Thalassemia and hemoglobinopathy testing and screening based on HPLC technology. 2. The system should be able to screen and quantitate HbA1c, HbA2, HbA, Hb F, HbS, HbD, HbE, HbC, HbQ-India and other rare abnormal hemoglobins. 3. Complete ready to use kit should be provided with Buffers in transparent plastic tanks to view the level of buffers; columns, primers, calibrators & sample vials. 4. The system should have optional features to load at least 30 samples simultaneously with continuous loading facility. 5. The system should have in-kit external standards for instrument calibration ensuring accurate quantitation of results. 6. The system should have a bi-directional LIS. 7. The system should have a features ample position identification to avoid error in case of faulty barcode reading. 8. The system should have a visible alarm system for low buffer reservoirs, low level value for cartridge injections and overflow for the waste tank, as well as in built alarms for calibration failure. 9. The system should be capable of positive sample identification using a Bar code reader. 10. The system should have the facility of primary tube sampling and direct dilution of the samples without manual intervention. 11. It should have an inbuilt system check facility which checks that all the system parameters (eg, cartridge, buffer, reagent, waste etc) are ready before the sample analysis. 12. System should have a dual program mode to perform either HbA1c or HbA2/HbF/HbA1C without changing nay reagent. 13. It should be able to print a hard copy report giving identification and information on the subtype and quantity of haemoglobins detected. It should have the facility to view current and stored chromatograms & should enable storage of chromatograms. 14. The system should have software for real time viewing of the analysis of the sample.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications. Recommendation of ADs(Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		15. The company should have off line library of chromatograms for result interpretation. 16. The company should have optional feature of capillary collection kit for remote sample collection with sample stability at 2-8oC for 14days. 17. Compatible UPS to be provided for 1 hour backup. 18. Computer and printer should be provided with the HPLC system. 19. Appropriate software for data analysis. 20. Equipment should be provided with reagents for at least 100 tests for standardization. 21. Company should take the responsibility for doing EQAS for 5 years. 22. Company should take responsibility for corrective action as necessary for any errors, detected either internally or through EQAS for at least 5 years. 23. The System should be CE/FD Approved. 24. At least 3 years' warranty and 5 years post-warranty CAMC terms. 25. Demonstration must be arranged, if required. 26. Installation, training and commissioning should be done free of cost. 27. A start-up kit for 100 tests should be provided with the equipment. 28. The after sales service should be available within 24 hours and with trained service personnel. 29. List of installations and feedback letters from the reputed government medical Institutes for this instrument supplied to assess performance and services. **STANDARD, SAFETY AND TRAINING :-** 1. Manufacture should have ISO certification. Product should be CE/US FDA / BIS certified.		

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.C.

Recommendation of ADG (Med)

Appendix-2K (xxvii)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
16.	FULLY AUTOMATED BIOCHEMISTRY ANALYSER	**SPECIFICATIONS :-** 1. System: complete Open discrete, automated multi–channel random access with automatic rerun facility. 2. Throughput: 360 or more photometric tests per hour. 3. Online tests and programmable parameters: Minimum of 50 photometric tests with facility for calculated test, profiles and formulas for online and programmable parameters. 4. Assay Type: Endpoint, rate and fixed point type of assay. 5. Calibration possibility: Linear Kinetic, one point, 2-point, rate linearity facility. 6. Sample Disk: More than 45 positions for routine tests with continuous loading facility. 7. Dedicated Stat Table: 8. Facility for on board refrigeration of reagents. 9. Sample Cups : Facility for primary tubes or sample cups of standard size. 10. Sample type: Serum, urine, CSF and body fluid should be assayed. 11. SampleVolume:25-250microlittersamplevolume. 12. Sample probe: Probe should be with level sensor and washing. 13. Reagent Volume: Less than 260 microlitre/test. 14. Reagent Disk: Refrigerated position for at least 45 reagent container. 15. Reagent probe: Probe should be with level sensor and washing. 16. Reagent Stirrer : Stirrer for proper maxing of sample and reagent. 17. Cuvette: Permanent quartz glass/hard glass tube with on board washing facility with de-ionized water and auto drain facility for the waste fluid. 18. Reaction Temperature: Reaction cuvette temperature control by dry bath incubator. 19. Photometer: photo metric range of 340 to 750 nm with diffraction and more than fixed wavelengths. 20. Absorbance range and sensitivity: photometric O.D range of 0-3 Sensitivity of 0.001 absorbance.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG (Med)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		21. Work station: Pentium based PC with at least 17 inch color monitor display with suitable UPS with 40minutes backup and online 80 character line printer to hold continuous sheets of a normal size. 22. Data Output: Through display and online 80 character line printer to hold continuous sheets of a normal paper. 23. Data Storage facility to store at least 25,000sample data on hard disk. 24. Quality Control: Real time, individual and cumulative quality controls. 25. Interface: Should be able to connect with LAN system. 26. Backup instruments: Discrete analyzer with a though put of 200 tests per hour without ISI. 27. De-ionizer: Compatible Deionizer plant with sufficient storage facility. 28. The system should have the facility to load more than 10 emergency samples on a separate tray. 29. Equipment should have reagent monitoring facility with massage for Replacement and display of reagent level. 30. Power Backup: Compatible online UPS System with a backup time of 30 minutes. 31. Warranty Clause: Two years warranty. 32. System should be CE/FDA Approved. **STANDARD, SAFETY AND TRAINING :** 1. Manufacture should have ISO certification. 2. Product should be CE/US FDA / BIS certified.		Recommendation of ADG (Med)
17	ECI (ENHANCED CHEMILUMINESCENCE) – IMMUNODIAGNOSTIC SYSTEM	**SPECIFICATIONS:-** 1. Bidder must provide original documentary proof of the date and place of manufacturing of equipment at the time of supply. 2. Should be based on Chemiluminescence technology. 3. Any necessary up-gradation in the equipment required in future will be the supplier's responsibility. 4. Parameters/ Investigations: Must include 4th generation HIVAg/Ab, HBsAg, Anti-HCV, HBV CoreAb, CMV, Syphilis, HTLV, SARSCOV2.	Board should physically check the machine for aforementioned parameters during demonstration.	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
	(FULLY AUTOMATED CLIA ANALYSER)	5. Sample: Human serum (including serum collected in serum separator tubes) or plasma collected in potassium EDTA, heparin, sodium citrate, CPDA-1, CPD, CP2D. 6. Through put should be at least 180 samples / hour. 7. The system should have the capability to do the assay in continuous, random batch and STAT mode. 8. Should have capacity to load at least 20 Reagents packs of different parameters at a time. 9. Reagent packs should be ready to use with automatic on board reagent mixing to avoid manual intervention & human related errors. 10. On board reagent stability of minimum 4 weeks with calibration stability of minimum 4 weeks should be there. 11. The system should not have to be stopped to reload new reagent kits. 12. The system should have single point data entry and result viewing with windows-based operating system having wide touch screen monitor. 13. Continuous printing facility of patient results, QC and calibration details should be available. 14. Option of taking back-up of patient results and QC reports on external services and USB devices should be possible. 15. On-board reagent inventory with automatic tracking and notification of remaining tests, onboard stability and expiration, calibration and storage conditions for each pack should be there. Reagent expiry should be minimum 4 months when supplied. 16. Reagent compartment with the required temperature for the reagent kits supplied by bidder should be available. 17. Should have access to samples during operation. Sample volume required should be 10-150 microlitre depending upon the analyte. 18. Should have facility to do Pre-dilution of samples. **19.** Equipment should be able to work with all types of sample containers including standard primary tubes (both vacuum and non-vacuum tubes), System should accommodate multiple sample tube size/sample cups.	Manufacturer must submit an undertaking and supportive documents in this regard	As per specifications

Recommendation of ADG (med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		20. Universal barcode reader should be able to read multiple barcode type. 21. Stat prioritization should be available on the system without interrupting the routine run. Dedicated STAT position should be available 22. System should be able to perform assays with zero carryover. 23. System should perform assays in discrete disposable cuvettes/cells. 24. All disposables and consumables (All controls, calibrators, wash reagents, assay diluents, disposable sample probe tips, reaction cuvettes and other consumables necessary for the investigations) should be included in the cost. 25. Should have on board sample auto dilution at least up to 1000 times. 26. Should have Clot detection, bubble detection and low sample detection facility, hemolysed and icteric sample detection facility. 27. Should have lot to lot calibration for each assay. The calibrator and controls should cover all investigations/ parameters mentioned above. Certificate of Traceability for calibrators, traceable to national/international reference standards to be submitted by the supplier. 4th generation controls for relevant assays should be provided. 28. Reaction time should be within 10–60 minutes for the listed parameters. 29. System should have automatic reflex testing. 30. Should have facility for continuous loading and unloading of reagents and other consumables and samples without stopping the analyzer. 31. Servicing instruments by remotely capturing operational data available in the system. 32. Random access calibration should be possible. 33. Provision of inbuilt QC monitoring system by LJ plots and Configurable QC based rules should be available.		Recommendation of ADs(med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		34. It is the responsibility of the supplier to integrate the software of the equipment with the existing HIS of the hospital for interfacing the results, free of cost. All necessary hardware and software required for connecting the equipment to the hospital network shall be provided. 35. HIS port, Ethernet port and USB port should be available along with the equipment. 36. Real time monitoring of QC violations, and turnaround time for samples should be available. 37. Instrument should provide integrated process control that monitors from sample aspiration to assay processing and report the same. Operator should be able to see the report for any discrepancies and able to take print out for audit purpose. 38. On board sample data storage capacity should be a minimum of 25000 patient results. 39. Should be able to work with Voltage: 200-240V and Frequency 47-60Hz. 40. UPS-3KVA with 30 minutes battery backup should be supplied with equipment. Appropriate battery backup should be arranged and maintained by the bidder with no extra cost. 41. The required plumbing/water plant facility should be provided and the same shall be maintained by the supplier itself. 42. All the pre-installation requirements for the machine except electrical and civil works should be done by vendor at no additional cost. 43. Floor drain kit should be set up by the bidder to route waste directly to floor drain. 44. The vendor should inspect the site before installation and prepare the site for installation and proper functioning of the equipment round the clock, free of cost. 45. The supplier shall be responsible for installation, commissioning and trial runs providing free trial kits for all tests along with respective calibrator and control.		Recommendation of ADG(Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		46. The firm should provide one kit per parameter at no extra cost for trial and training purpose. The equipment being installed should be validated in-house and documents for IQ/OQ/PQ has to be provided to the Institute. 47. Three levels of internal QC should be provided by the bidder from a FDA-approved third party manufacturer six monthly. 48. NABL standard will be adhered for running QCs and the number of QCs will be paid as per CPRT. 49. On failure of QC, the cost per reportable test (CPRT) for troubleshooting will be borne by the firm. 50. Demonstration and on-site training of staff up to their satisfaction by the application experts is an absolute must. 51. At least 3 years' warranty and 5 years post-warranty CAMC terms should be quoted. **STANDARD, SAFETY AND TRAINING :-** 1. The equipment and all reagents should be European CE-IVD, USFDA, CDSCO approved. 2. Manufacture should have ISO certification.		Recommendation of ADG(med)
18	URINOMETER AUTOMATIC / URINE ANA LYSER	**SPECIFICATIONS:-** 1. User friendly system operation. 2. Test items : Urobilinogen, Bilirubin, Ketone, Blood, Protein, Nitrite, Leukocytes, Glucose, Specific gravity, pH, Microalbumin, Creatinine, Turbidity, Colour, RBC, WBC, Epithelial cells, Cast, Bacteria. 3. Test wavelength : Shall be able to operate at Wavelength required for the Parameter. 4. Test principle: Reflectance/ Fluorescence Flow cytometry / Digital Flow cytometry. 5. Suitable strips for above test Parameters and shall have automatic waste-strip disposal. 6. Suitable strips of all parameters (10 Bottles) and controls of two levels (normal and abnormal) must be supplied along with the equipment.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard.	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		7. Test throughput: minimum 100 tests/hr. (Chemistry) & 50 samples/ hour (sediment analysis) 8. Data memory: 1000 patient results. 9. Computer interface: Standard RS-232/ USB interface for data exchange & system software updating when connected with PC. 10. Built in thermal printer with high speed and low noise along with paper rolls (10 Nos). 11. Barcode Reading facility to be made available either directly through machine or through PC and suitable configured Bar code reader to be supplied along with machine. 12. Display: Large LCD display and menu-driven friendly interface. 13. Power supply: 100-240 VAC, 50 Hz / 60 Hz. 14. Operating temp : 10-300 c, relative humidity < 70% 15. International, regular and symbol system units available for option. If possible. 16. Suitable online UPS with 2 hours or more backup. 17. The Equipment quoted should be USFDA Approved or CE Mark from the Notified Body (EU). 18. The company shall provide 3 years warranty along with 4 years CMC. 19. The company shall provide Performance, Installation, operational along with Quality certificate. 20. Company should provide Hard & Soft copies of Manuals & Literature of the Equipment. 21. Linearity should be specified for every parameter and procedure followed should be specified. 22. For installation reagent, controls and calibrators should be provided by the company. 23. The instrument should provide scattergrams and histograms or actual images for easy interpretation. 24. The analyser should provide additional RBC information, UTI information and conductivity. 25. Controls should be available for both chemistry and sediment analysis.		Recommendation of ADG (Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		26. The equipment should have interface for output to printer or transmitted to LIS/ HIS and it would the responsibility of the supplier to do the interfacing. 27. At least 2 years' warranty and 3 years post-warranty CAMC terms. **STANDARD, SAFETY AND TRAINING :-** 1. Should have the ISO certification and the copy of the same should be enclosed along with the technical bid. 28. Equipment should be USA-FDA/ European CE approved.		Recommendation of ADG (Med) I
19	FLUORESCENCE IMMUNOASSAY ANALYZER	**SPECIFICATIONS:-** 1. Principal – Should be based on Fluorescence Immunoassay method. 2. See – through Cover Cartridges to be run for following tests HbA1c, Vitamin D, T3, T4, TSH, Dengue NS1, Dengue IgM, Dengue IgG, CRP and PCT. 3. Can perform HbA1c, Vitamin D, T3, T4, TSH, Dengue NS1, Dengue IgM, Dengue IgG, CRP and PCT. 4. Test results for HbA1c, Vitamin D, T3, T4, TSH, PCT and CRP should be quantitative. 5. Test results for Dengue NS1, Dengue IgM & Dengue IgG, shall be displayed as Reactive/Non-Reactive 6. Thyroid Test: Fluorescence Immunoassay method for quantitative measurement of thyroid markers (T3, T4 &TSH) in human serum / Plasma. 7. Can perform 4 Different tests at a time and give Step-by-Step instructions for specific test with Multi Timer & Instructor for monitoring the "TEST RUN TIME". 8. System should have remote access facility via Wi-Fi/Mobile Hotspot. 9. Provision for wireless patient data transfer via Bluetooth.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard.	As per specifications.

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		10. System should have provision for up gradation of latest software and to add new parameter in future without changing any hardware of equipment via remote access facility. This should be free of cost. 11. System should have provision for On-line Technical Support. Operational training and troubleshooting via remote access. 12. Should have large Touch Screen display not less than 10". 13. Should have not less than 4 GB RAM & 64 GB Storage capacities. 14. Patient Data Storage Memory should not be less than 1,00,000 nos. of Patient reports. 15. Should have latest high end Intel Quad Core Processor for faster processing of samples. 16. Should have one hour Internal Battery Backup for Emergency operations. 17. Light Weight; should not be more than 2.0 Kg. 18. Operating Temperature Range 15-350C. 19. Must be supply along-with vortex mixer & duel heating block for mixing and incubation of sample and test cartilages. 20. Vitamin D result can be traceable to international standard reference NIST-SRM 972a, USA. Result correlation with LC-MS/MS quantitative detection of 25-OH vitamin D2 & D3. 21. HBA1C test should be certified from NGSP – USA. **STANDARD, SAFETY AND TRAINING :-** 1. Manufacturer should present directly in India for technical and service support. 2. Cost of consumable should be very competitive especially for thyroid test and test can be performed with individually pouched test cartridges, each cartridges should be precision engineered with imbedded lot data. 3. At least 3 years' warranty and 4 years post-warranty CAMC terms.		

Recommend-ation of ADG (Med)

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Appendix-2K (xxxvi)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
20	FULLY AUTOMATED ANALYZER FOR MULTIPLE ALLERGENS	**SPECIFICATIONS:-** 1. It should be an automated fluorescence enzyme immunoassay (FEIA) based technology designated to aid in diagnosis of allergic and autoimmune diseases. 2. Allergen panel should be detecting sensitization to at least 500 allergens and including more than 100 allergen components. **3.** Autoimmunity panel for evaluation of over20 diseases. **4.** Must be capable to report at least 40 results/hour. **5.** All reagents should be available on-board and continuous random accessibility to any reagent must be available. **6.** On-board dilution facility should be available along with sample diluents and dilution plates. **7.** At least 28-days' storage of calibration curves should be there. **8.** Sample racks for minimum 40 samples. **9.** All tests should be measured from one patient sample 10. LCD touch screen for intuitive instrument management. 11. Integrated storage for wash and rinse solution, as well as solid and liquid waste containers. 12. Cooled storage chamber for allergen panel and reagents in loading tray. 13. Barcode reader, for identification of reagents. 14. Cooled conjugate compartment. **15.** It should have Connectivity to LIS. Suitable technical support for on-boarding of the equipment to the LIS must be carried by the firm free of cost.	Board should physically check the machine for aforementioned parameters during demonstration. Manufacturer must submit an undertaking and supportive documents in this regard.	As per specifications.

Member-I	Member-II	Member-III	Member-IV	Member-V	Member-VI	Member-VII	Member-VIII	Member-IX	Member-X	Member-X	Member-XI	Member-XII	P.O.

Recommendation of ADG (Med)

Appendix-2K (xxxvii)

Sl. No.	Name of the equipment	Specifications	Procedure suggested for trial by board of officers	Results expected/ Desired
		STANDARD, SAFETY AND TRAINING :- 1. Manufacturer should be present directly in India for technical and service support. 2. At least 3 years' warranty and 4 years post-warranty CAMC terms should be quoted by the firm.		

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