A. SPECIFICATIONS FOR MULTI CHANNEL ECG MACHINE-12 CHANNELS

1 Description of Function
1.1 ECG Machine is primary equipment to record ECG Signal in various configurations. 12 channels with interpretation are required for recording and analyzing the waveforms with a special software.

2 Operational Requirements
2.1 The ECG Machine should be able to acquire all 12 Leads simultaneously and interpret them

3 Technical Specifications
3.1 Should acquire simultaneous 12 lead ECG for both adult and pediatric patients
3.2 Should have Real time display of ECG waveforms with signal quality indication for each lead
3.3 Should have Artifact, AC, and low and high pass frequency filters.
3.4 Should have a storage memory of at least 40 ECGs with easy transfer by optional modem and data card.
3.5 Should have full screen preview of ECG report for quality assessment checks prior to print.
3.6 Should have interpretation facility of the amplitudes, durations and morphologies of ECG waveforms and associated rhythm for pediatric and neonatal patients.
3.7 Should have alphanumeric Keyboard for patient data Entry. (virtual or hard keys)
3.8 Should have High resolution (200 dpix500dpi on 25 mm/sec speed) digital array A4 size printer
3.9 Should have report formats of 3 x4; 6 x2, Rhythm for up to 12 selected leads; 12 Lead Extended measurements, 1 minute of continuous waveform data for 1 selected lead.
3.10 Should have battery capacity of at least 30 ECGs or 30 minutes of continuous rhythm recording on single charge
3.11 Should be able to be connected to HIS /LAN/Wireless LAN(OPTIONAL)
3.12 Should display ECG on LCD/TFT Display.
3.13 USB Support (optional) for Storage on external portable memories.
3.14 Minimum 150 ECG Storage in Floppy or flash memory or any better device.

4 System Configuration Accessories, spares and consumables
4.1 ECG Machine 12 Leads with Interpretation - 01
4.2 Patient Cable -02
4.3 Chest Electrodes Adult-(set of six) -02 sets.
4.4 Chest Electrodes Paediatric-(set of six) -02 sets
4.5 Limb Electrodes(set of 4)- 02 sets
4.6 Thermal Paper A4 Size for 500 patients

5 Environmental factors
5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%
5.2 The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%
5.3 Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. or should comply with 89/366/EEC; EMC-directive.

6 Power Supply
6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug

7 Standards, Safety and Training
7.1 Should be FDA/CE or BIS approved product
7.2 Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms. (OR EQUIVALENT BIS Standard)

8 Documentation
8.1 User Manual in English
8.2 Service manual in English
8.3 List of important spare parts and accessories with their part number and costing
8.4 Certificate of calibration and inspection.
8.5 Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.
The job description of the hospital technician and company service engineer should be clearly spelt out
8.6 List of Equipments available for providing calibration and routine Preventive Maintenance Support. as per manufacturer documentation in service/technical manual.