

**EVALUATION REPORT ON TECHNICAL BIDS OPENED ON 08-10-2016 FOR THE PROCUREMENT OF pH METER, TENDER ENQUIRY
NO. PC/DF (EXT)-II/ 2016-17**

Sr. #	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendations with reasons
				pH Meter		
1.	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		M/S. Saad Scientific Supplier Suite #13 Ground Floor, Wajid Centre Muj Darya Road, Lahore	Model: Starter 3100-F Origin of Brand: OHAUS, USA.		This firm has quoted specifications of pH meter which match the approved specifications of the Department for pH meter. Thus, this firm is RECOMMENDED for purchase of said item.
	Measurement Range	-2.00...16.00 pH or better		Measurement Range	-2.00...16.00 pH	
	mV Range	-1999...+1999mV or better		mV Range	-1999...+1999mV	
	Temperature Range	-5C...110C°		Temperature Range	-5C...110C°	
	Resolution pH	0.01 pH		Resolution pH	0.01 pH	
	Resolution mV	1mV		Resolution mV	1mV	
	Resolution Temperature	0.1 C°		Resolution Temperature	0.1 C°	
	Accuracy pH	+0.01 pH or better		Accuracy pH	+0.01 pH	
	Accuracy mV	± 1 mV		Accuracy mV	± 1 mV	
	Accuracy Temperature	± 0.5 C°		Accuracy Temperature	± 0.5 C°	
	pH Calibration	Up to 3 points or better		pH Calibration	Up to 3 points	
	calibration Buffer	3 predefined buffer group		calibration Buffer	3 predefined buffer group	
	memory	99 sets, most recent calibration data		memory	99 sets, most recent calibration data	
	Power/Battery	240V/50-60Hz, 9 V DC		Power/Battery	240V/50-60Hz, 9 V DC	
Display	White backlight liquid crystal	Display	White backlight liquid crystal			

pH input	BNC, impedance > 10e+ 12Ω	pH input	BNC, impedance > 10e+ 12Ω
Temp input	Cinch, NTC 30 kΩ	Temp input	Cinch, NTC 30 kΩ
Temp Compensation	ATC or MTC	Temp Compensation	ATC or MTC
Communication port	RS 232	Communication port	RS 232
Housing Materials	ABS	Housing Materials	ABS
Accessories	Set of buffer concentrate Sashes 4, 7 & 10.	Accessories	Set of buffer concentrate Sashes 4, 7 & 10.

Sr. #	Approved Specification of the Department	Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons	
			pH Meter			
2.	Origin of Brand: West Europe, China, USA, Japan & Canada etc.	Scientific Technical Corporation (pvt) Ltd. IG-2, 3,4 and 6 Queens center 33-Shara-e-Fatima Jinnah (Queens Road Lahore)	Model: BANTE 920		This firm has quoted specifications of pH meter which match the approved specifications of the Department for pH meter. Thus, this firm is RECOMMENDED for purchase of said item.	
			Origin of Brand: USA			
	Measurement Range		-2.00...16.00 pH or better	Measurement Range		-2.000~20.000 pH
	mV Range		-1999...+1999mV or better	mV Range		-1999~1999.9mV
	Temperature Range		-5C...110C°	Temperature Range		0~105 C°
	Resolution pH		0.03 pH	Resolution pH		0.001, 0.01, 0.1 pH
	Resolution mV		1mV	Resolution mV		0.1, 1mV, select able
	Resolution Temperature		0.1 C°	Resolution Temperature		Not mentioned
	Accuracy pH		+0.01 pH or better	Accuracy pH		+0.002 pH
	Accuracy mV		+ 1 mV	Accuracy mV		+ 0.2 mV
Accuracy	+ 0.5 C°	Accuracy	+ 0.5 C° ± 0.9 F			

Temperature		Temperature	
pH Calibration	Up to 3 points or better	pH Calibration	Up to 5 points
calibration Buffer	3 predefined buffer group	calibration Buffer	USA (pH 1.68/4.01/7.00/10.01/12.45)
memory	99 sets, most recent calibration data	memory	500 data sets with date/time stamping
Power/Battery	240V/50-60Hz, 9 V DC	Power/Battery	DC 5 V, using AC adapter 220 VAC/50 Hz
Display	White backlight liquid crystal	Display	Custom dual display LCD (130X110 mm)
pH input	BNC, impedance > 10e+12 Ω	pH input	Not mentioned
Temp input	Cinch, NTC 30 k Ω	Temp input	Not mentioned
Temp Compensation	ATC or MTC	Temp Compensation	0~100C, 32~212F
Communication port	RS 232	Communication port	USB communication interface
Housing Materials	ABS	Housing Materials	Not mentioned
Accessories	Set of buffer concentrate Sashes 4,7& 10.	Accessories	(pH, 4.01, 7.00 and 10.01)

Sr. #	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons
				pH Meter		
3. (A)	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		East West Infiniti Pvt. Ltd 146, industrial triangle, kahauta road, humak Islamabad	A. MODEL: YSI, ECOSENSE, pH 100A Origin of Brand: USA.		This firm has quoted specifications of pH meter which match the approved specifications of the Department for pH meter. Thus, this firm is RECOMMENDED for purchase of said item.
	Measurement Range	-2.00...16.00 pH or better		Measurement Range	-2 to 16 units	
	mV Range	-1999...+1999mV or better		mV Range	-1999...+1999mV	
	Temperature Range	-5C...110C°		Temperature Range	-10 to +120 C°	
	Resolution pH	0.01 pH		Resolution pH	0.01 unit	
	Resolution mV	1mV		Resolution mV	1mV	
	Resolution Temperature	0.1 C°		Resolution Temperature	0.1 C°	
	Accuracy pH	+0.01 pH or better		Accuracy pH	+0.1 % + 2 digit	
	Accuracy mV	± 1 mV		Accuracy mV	± 0.1%, +1 digit	
	Accuracy Temperature	± 0.5 C°		Accuracy Temperature	± 0.3 C°, +1 digit	
	pH Calibration	Up to 3 points or better		pH Calibration	Yes	
	calibration Buffer	3 predefined buffer group		calibration Buffer	US (4.00, 7.00 and 10.00 at 25C)	
	memory	99 sets, most recent calibration data		memory	50 data sets review able memory	
	Power/Battery	240V/50-60Hz, 9 V DC		Power/Battery	One 9 volt, 1000 hr battery life	
	Display	White backlight liquid crystal		Display	Not mentioned	
	pH input	BNC, impedance > 10e+ 12Ω		pH input	Not mentioned	

Temp input	Cinch, NTC 30 k Ω	Temp input	Not mentioned
Temp Compensation	ATC or MTC	Temp Compensation	Auto/manual, -10.0 to 120 $^{\circ}$ C
Communication port	RS 232	Communication port	Not mentioned
Housing Materials	ABS	Housing Materials	Not mentioned
Accessories	Set of buffer concentrate Sashes 4,7& 10.	Accessories	US (4.00, 7.00 and 10.00 at 25 $^{\circ}$ C)

Sr.#	Approved Specification of the Department	Name of the Firm & Address	Specification/Brand/Model quoted by the Firm	Remarks/Recommendation with reasons		
3 (B)	Origin of Brand: West Europe, China, USA, Japan & Canada etc.	East West INFINITI PVT. LTD 146, Industrial Triangle, Kahauta road, humak Islamabad	B. MODEL: YSI TRULAB, pH 1110 Origin of Brand: USA.	This firm is NOT RECOMMENDED for purchase of pH meter due to following reasons that it has quoted the specifications which not match the specifications mentioned in the tender. i. Calibration buffer ii. Memory iii. Display iv. pH input v. Temp Input vi. Temp Compensation vii. Commination port viii. Housing material ix. Accessories		
	Measurement Range		-2.00...16.00 pH or better		Measurement Range	-2.00 to 20.00 unit
	mV Range		-1999...+1999mV or better		mV Range	-1200 to 1200.0, -2000 to 2000
	Temperature Range		-5C...110C $^{\circ}$		Temperature Range	-5 to 105C $^{\circ}$
	Resolution pH		0.02 pH		Resolution pH	0.1, 0.01, 0.001
	Resolution mV		1mV		Resolution mV	0.1, 1.0 mV
	Resolution Temperature		0.1 C $^{\circ}$		Resolution Temperature	0.1 C $^{\circ}$
	Accuracy pH		\pm 0.01 pH or better		Accuracy pH	\pm 0.1, +0.01, 0.005
	Accuracy mV		\pm 1 mV		Accuracy mV	\pm 0.3, +1.0
	Accuracy Temperature		\pm 0.5 C $^{\circ}$		Accuracy Temperature	\pm 0.1 C $^{\circ}$
	pH Calibration		Up to 3 points or better		pH Calibration	1,2 or 3 points
	calibration Buffer		3 predefined buffer		calibration	Not mentioned

	group		Buffer	
memory	99 sets, most recent calibration data		memory	Not mentioned
Power/Battery	240V/50-60Hz, 9 V DC		Power/Battery	4 alkaline AA batteries (~2500 hr)
Display	White backlight liquid crystal		Display	Not mentioned
pH input	BNC, impedance > 10e+12 Ω		pH input	Not mentioned
Temp input	Cinch, NTC 30 kΩ		Temp input	Not mentioned
Temp Compensation	ATC or MTC		Temp Compensation	Not mentioned
Communication port	RS 232		Communication port	Not mentioned
Housing Materials	ABS		Housing Materials	Not mentioned
Accessories	Set of buffer concentrate Sashes 4, 7 & 10.		Accessories	Not mentioned

Sr. #	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons
				pH Meter		
3. (C)	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		East West Infiniti PVT. LTD 146, industrial triangle, kahauta road, humak Islamabad	C. MODEL: YSI TRULAB, pH 1310 Origin of Brand: USA.		This firm is NOT RECOMMENDED for purchase of pH meter due to following reasons that it has quoted the specifications which not match the specifications mentioned in the
	Measurement Range	-2.00...16.00 pH or better		Measurement Range	-2 to 20.0, -2.0 to 20.0, -2.000 to 19.999	
	mV Range	-1999...+1999mV or better		mV Range	-1200 to 1200, -2500 to 2500	
	Temperature	-5C...110C°		Temperature	-5 to 105 C°	

Range		Range		tender. i. pH input ii. Accessories iii. Temp Input iv. Temp Compensation v. Commination port vi. Housing material
Resolution pH	0.03 pH	Resolution pH	0.1, 0.01, 0.001	
Resolution mV	1mV	Resolution mV	0.1, 1.0	
Resolution Temperature	0.1 C°	Resolution Temperature	0.1 C°	
Accuracy pH	±0.01 pH or better	Accuracy pH	±0.01, ±0.01, ±0.005	
Accuracy mV	± 1 mV	Accuracy mV	+ 0.3, +1.0	
Accuracy Temperature	± 0.5 C°	Accuracy Temperature	± 0.1 C°	
pH Calibration	Up to 3 points or better	pH Calibration	1,2,3,4 or 5 points	
calibration Buffer	3 predefined buffer group	calibration Buffer	Not mentioned	
memory	99 sets, most recent calibration data	memory	5000 data sets, auto logging, 500 data sets manual logging	
Power/Battery	240V/50-60Hz, 9 V DC	Power/Battery	4 Alkaline AA batteries (~ 150 hr)	
Display	White backlight liquid crystal	Display	Backlit graphic Display	
pH input	BNC, impedance > 10e+12Ω	pH input	Not mentioned	
Temp input	Cinch, NTC 30 kΩ	Temp input	Not mentioned	
Temp Compensation	ATC or MTC	Temp Compensation	Not mentioned	
Communication port	RS 232	Communication port	Not mentioned	
Housing Materials	ABS	Housing Materials	Not mentioned	
Accessories	Set of buffer	Accessories	Not mentioned	

		concentrate Sashes 4,7& 10.				
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Sr. #	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons
				pH Meter		
4. (A)	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		Lab -Link International, 13Jan Muhammad road, near Bombay center, new anarkali road, Lahore	A. MODEL: YSI ECOSECSE, pH 100 Origin of Brand: YSI, USA.		This firm has quoted specifications of pH meter which match the approved specifications of the Department for pH meter. Thus, this firm is RECOMMENDED for purchase of said item.
	Measurement Range	-2.00...16.00 pH or better		Measurement Range	-2 to 16 units	
	mV Range	-1999...+1999mV or better		mV Range	-1999 to +1250 mv	
	Temperature Range	-5C...110C°		Temperature Range	-10 to 120 C°	
	Resolution pH	0.04 pH		Resolution pH	0.1 unit,	
	Resolution mV	1mV		Resolution mV	1 mv	
	Resolution Temperature	0.1 C°		Resolution Temperature	0.1 C°	
	Accuracy pH	+0.01 pH or better		Accuracy pH	+0.1%, + 2 digit	
	Accuracy mV	± 1 mV		Accuracy mV	± 0.1%, ±1 digit	
	Accuracy Temperature	± 0.5 C°		Accuracy Temperature	± 0.3 C°, ±2 digit	
	pH Calibration	Up to 3 points or better		pH Calibration	Yes	
	calibration Buffer	3 predefined buffer group		calibration Buffer	(4.01, 7.00, 10.01)	
	memory	99 sets, most recent calibration data		memory	50 data sets reviewable	
	Power/Battery	240V/50-60Hz, 9 V DC		Power/Battery	One 9 volt	
	Display	White backlight liquid crystal		Display	Liquid crystal IP 67 (water proof)	
pH input	BNC,	pH input	water proof Y			

	impedance > 10e+12 Ω			cable with combo pH/reference junction & ATC electrode.	
Temp input	Cinch, NTC 30 kΩ		Temp input	ATC, thermistors, 10 kΩ, 25 C	
Temp Compensation	ATC or MTC		Temp Compensation	auto/manual -10C to 120 C	
Communication port	RS 232		Communication port	not in this model mostly in desktop model.	
Housing Materials	ABS		Housing Materials	ABS	
Accessories	Set of buffer concentrate Sashes 4, 7 & 10.		Accessories	Set of buffer 4, 7 & 10	

Sr.#	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons	
				pH Meter			
4. (B).	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		Lab -Link International, 13Jan Muhammad road, near Bombay center, new anarkali road, Lahore	B. MODEL: pH 207		This firm is NOT RECOMMENDED for purchase of pH meter due to following reasons that it has quoted the specifications which not match the specifications mentioned in the tender. i. Measurement range ii. Calibration buffer iii. pH input iv. Temp Input Housing material	
	Measurement Range	-2.00...16.00 pH or better		Origin of Brand: TAIWAN.	Measurement Range		0 to 14 pH
	mV Range	-1999...+1999mV or better		mV Range	0 to 1999 mv		
	Temperature Range	-5C...110C°		Temperature Range	0 to 65 C°		
	Resolution pH	1.01 pH		Resolution pH	0.01 pH		
	Resolution mV	1mV		Resolution mV	1 mv		
	Resolution Temperature	0.1 C°		Resolution Temperature	0.1 C°		
	Accuracy pH	±0.01 pH or better		Accuracy pH	±(0.03 pH + 2 digit)		

Accuracy mV	± 1 mV	Accuracy mV	$\pm (0.5\%, \pm 1$ digit)
Accuracy Temperature	± 0.5 C°	Accuracy Temperature	0-50 C, + 1C
pH Calibration	Up to 3 points or better	pH Calibration	built in slope (pH 4) and CAL. (pH 7) calibration VR on front panel, high reliability
calibration Buffer	3 predefined buffer group	Calibration Buffer	Not mentioned
memory	99 sets, most recent calibration data	memory	Records maximum, minimum and average readings with recall.
Power/Battery	240V/50-60Hz, 9 V DC	Power/Battery	Heavy duty type, 006P DC 9V battery
Display	White backlight liquid crystal	Display	Dual function meters display (LCD)
pH input	BNC, impedance $> 10e+12$ Ω	pH input	Not mentioned
Temp input	Cinch, NTC 30 k Ω	Temp input	Not mentioned
Temp Compensation	ATC or MTC	Temp Compensation	0 to 100 C°
Communication port	RS 232	Communication port	Rs. 232 PC serial interface
Housing Materials	ABS	Housing Materials	Not mentioned
Accessories	Set of buffer concentrate Sashes	Accessories	instruction manual 1 PC,

		4,7& 10.			carring case, buffer solution, pH-04,07, ORP-14	
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Sr.#	Approved Specification of the Department		Name of the Firm & Address	Specification/Brand/Model quoted by the Firm		Remarks/Recommendation with reasons
				pH Meter		
5.	Origin of Brand: West Europe, China, USA, Japan & Canada etc.		Multi LinkX Enterprises office D-1 1 st floor, Shah Plaza, Asghar mall Road Rawalpindi	MODEL: HI-2002, EDGE Origin of Brand: HANNA, (USA).		This firm is NOT RECOMMENDED for purchase of pH meter due to following reasons that it has quoted the specifications which not match the specifications mentioned in the tender. i. Calibration buffer ii. memory iii. Display iv. pH input v. Temp Input vi. Communication port vii. Accessories viii. Housing material
	Measurement Range	-2.00...16.00 pH or better		Measurement Range	-2.00 to 16.00, -2.000 to 16.00 pH	
	mV Range	-1999...+1999mV or better		mV Range	+1000 mv	
	Temperature Range	-5C...110C°		Temperature Range	-20.0 to 120.0 C°	
	Resolution pH	1.02 pH		Resolution pH	0.1 to 0.001 pH	
	Resolution mV	1mV		Resolution mV	0.1 mv	
	Resolution Temperature	0.1 C°		Resolution Temperature	0.1 C° to 0.1 F°	
	Accuracy pH	±0.01 pH or better		Accuracy pH	± 0.01 to 0.002 pH	
	Accuracy mV	± 1 mV		Accuracy mV	± 0.2 mV	
	Accuracy Temperature	± 0.5 C°		Accuracy Temperature	± 0.5 C° ±0.9 F°	
	pH Calibration	Up to 3 points or better		pH Calibration	upto 3 point	
	calibration Buffer	3 predefined buffer group		Calibration Buffer	Not mentioned	
	memory	99 sets, most recent calibration data		memory	Not mentioned	
	Power/Battery	240V/50-60Hz, 9 V DC		Power/Battery	5 VDC adapter included	
	Display	White backlight liquid		Display	Not mentioned	

