

I Year B.E. (Modified R 2004)

PC 1X01 PHYSICS & CHEMISTRY LABORATORY

Requirements for a batch of 30 students

Physics Laboratory

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Torsional Pendulum apparatus (With accessories)	5 No	6 No	
2.	Non-uniform Bending apparatus (With accessories)	5 No	6 No	
3.	Viscosity (Poiseuille's flow) apparatus (With accessories)	5 No	6 No	
4.	Lees' disc apparatus (With accessories)	5 No	6 No	
5.	Air Wedge apparatus (With traveling microscopes and accessories)	5 No	6 No	
6.	Band gap apparatus/ Post office box	5 No	5 No	
7.	Spectrometer (With grating, prism and accessories)	5 No	6 No	
8.	Diode laser (2 mW power) or He-Ne laser (2mW) (Lycopodium powder, Optical fibre Kit and accessories)	5 No	6 No	
9.	Thermo emf – potentiometer apparatus (With accessories)	5 No	6 No	
10.	Ultrasonic interferometer (With accessories)	5 No	5 No	

Chemistry Laboratory

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Electronic balance	1 No.	1 No.	
2.	pH meter	4 No.	4 No.	
3.	Conductivity bridge	4 No.	4 No.	
4.	Potentiometer	4 No.	4 No.	
5.	Platinum electrodes	4 No.	4 No.	
6.	Calomel electrodes	4 No.	4 No.	
7.	Spectrophotometer	1 No.	1 No.	
8.	Flame photometer	1 No.	1 No.	
9.	Oswald viscometer	10 No.	31 No.	
10.	Glassware	Sufficient Quantity	Available	

I Year B.E. (Modified R 2004)

GE 1X02 COMPUTER PROGRAMMING LABORATORY

Requirements for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
Hardware				
1.	LAN system with 36 nodes (OR) stand alone PCs	36 No.	63 No.	
2.	Printer	1 No.	3 No.	
Software				
1.	Operating System	Windows / Unix Clone	Available	
2.	Compiler	C compiler	Available	
3.	Application package	Office suite	Available	

I Year B.E. (Modified R 2004)
GE 1X03 Engineering Practices Laboratory
Requirements for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
CIVIL				
1.	Assorted components for plumbing consisting of metallic pipes, plastic pipes, flexible pipes, couplings, unions, elbows, plugs and other fittings.	15 sets	15 sets	
2.	Carpentry vice (fitted to work bench)	15 No.	15 No.	
3.	Standard woodworking tools	15 sets	15 sets	
4.	Models of industrial trusses, door joints, furniture joints	5 each	5 each	
MECHANICAL				
1.	Arc welding transformer with cables and holders	5 No.	5 No.	
2.	Welding booth with exhaust facility	5 No.	5 No.	
3.	Welding accessories like welding shield, chipping hammer, wire brush, etc.	5 sets	5 sets	
4.	Oxygen and acetylene gas cylinders, blow pipe and other welding outfit.	2 No.	2 No.	
5.	Centre lathe	2 No.	2 No.	
6.	Hearth furnace, anvil and smithy tools	2 sets	2 sets	
7.	Moulding table, foundry tools	2 sets	2 sets	
8.	Study-purpose items: centrifugal pump, air-conditioner	One Each.	One Each.	

ELECTRICAL				
1.	Assorted electrical components for house wiring	15 sets	15 sets	
2.	Electrical measuring instruments	10 sets	10 sets	
3.	Study purpose items: Iron box, fan and regulator, emergency lamp	One each	One each	
ELECTRONICS				
1.	Soldering guns	10 No.	10 No.	
2.	Assorted electronic components for making circuits	50 No.	50 No.	
3.	Small PCBs	10 No.	10 No.	
4.	Multi Meters	10 No.	11 No.	
5.	Study purpose items: Telephone, FM radio, low-voltage power supply	2 each	2 each	

Faculty of Electrical Engineering

III Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

EE 1203 – Electrical Machines Laboratory – I

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	D.C motor – Generator set D.C motor – Shunt Generator D.C motor – Compound Generator	2 set 2 set	4 set	
2.	D.C. Shunt Motor	2 Nos.	3 Nos.	
3.	D.C. Series Motor	1 No.	1 No.	
4.	D.C. Compound Motor	1 No.	2 No.	
5.	Single phase transformers	7 Nos.	7 Nos.	
6.	Three phase transformers	2 Nos.	2 Nos.	
7.	D.C. Motor – Alternator set	4 sets	5 sets	
8.	Three phase Induction Motor (Squirrel cage)	3 Nos.	3 Nos.	
9.	Three phase slip ring Induction Motor	1 No.	1 No.	
10.	Single phase Induction Motor	2 Nos.	3 Nos.	
11.	Resistive load 3 phase – 2 , single phase - 3	5 Nos.	9 Nos.	
12.	Inductive load	1 No.	3 No.	
13.	Single phase Auto transformer	5 Nos.	5 Nos.	
14.	Three phase Auto transformer	3 Nos.	3 Nos.	
15.	Moving Coil Ammeter of different ranges	20 Nos.	47 Nos.	
16.	Moving Coil Voltmeter of different ranges	20 Nos.	44 Nos.	
17.	Moving Iron Ammeter of different ranges	20 Nos.	47 Nos.	
18.	Moving Iron voltmeter of different ranges	20 Nos.	44 Nos.	
19.	Wire wound Rheostats of different ratings	30 Nos.	50 Nos.	
20.	Tachometers	10 Nos.	17 Nos.	
21.	Single element wattmeters of different ranges UPF / LPF	20 Nos.	44 Nos.	
22.	Double element wattmeters of different ranges	4 Nos.	4 Nos.	
23.	Power factor meter	2 Nos.	2 Nos.	
24.	Digital multimeter	5 Nos.	5 Nos.	
25.	Three point starter, four point starter, DOL starter, manual star / delta starter, semi automatic and fully automatic star / delta starter	1 No each for study experiment	1 No each for study experiment	

Faculty of Electrical Engineering

III Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

CS 1212– Data Structures and Algorithms Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
	Hardware Required			
1.	Computer(Pentium 4)	40 Nos with one server	40 Nos with one server	
2.	Dot matrix printer	3 Nos	4 Nos	
3.	Laser Printer	2 Nos	2 Nos	
4.	UPS (5 KVA)	2	4	
	Software Required			
5.	Turbo C	40 Nodes	40 Nodes	

Faculty of Electrical Engineering

III Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

EE1152 - Electric Circuits Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Regulated Power Supply : Regulated Variable 0-15 V d.c	6 Nos.	6 Nos.	
2.	Digital Multimeter	6 Nos.	6 Nos.	
3.	SPST Switch	5 Nos.	5 Nos.	
4.	SPDT Switch	4 Nos.	4 Nos.	
5.	(0-10) m.A milliammeter	2 No.	2 No.	
6.	Ohm Meter	3 Nos.	3 Nos.	
7.	(0-100) m.A dc ammeter	1 No.	1 No.	
8.	(0-100) m.A milliammeter	3 No.	3 No.	
9.	(0-5) m.A milliammeter	2 No.	2 No.	
10.	(0-5) A Ammeter	1 No.	1 No.	
11.	Oscilloscope	7 Nos.	7 Nos.	
12.	Function Generator	8 Nos.	8 Nos.	
13.	Electronic Analog Voltmeter or Digital Multimeter	1 No.	1 No.	
14.	Voltmeter (0-500) V A.C	1 No.	1 No.	
15.	Wattmeter 500 V, 15 UPF	1 No.	1 No.	
16.	3phase loading Rheostat	1 No.	1 No.	
17.	3 phase Induction motor Load	1 No.	1 No.	
18.	Math Lab / Simulink	1 No.	1 No.	
19.	Resistor:			
	i. 68 Ω	6 Nos.	6 Nos.	
	ii. 100 Ω	6 Nos.	6 Nos.	
	iii. 330 Ω	6 Nos.	6 Nos.	
	iv. 390 Ω	6 Nos.	6 Nos.	
	v. 470 Ω	6 Nos.	6 Nos.	
	vi. 560 Ω	6 Nos.	6 Nos.	
	vii. 680 Ω	6 Nos.	6 Nos.	
	viii. 820 Ω	6 Nos.	6 Nos.	
	ix. 1k Ω	6 Nos.	6 Nos.	
	x. 1.2k Ω	6 Nos.	6 Nos.	

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
	xi. 1.8k Ω	6 Nos.	6 Nos.	
	xii. 2.2k Ω	6 Nos.	6 Nos.	
	xiii. 2.7k Ω	6 Nos.	6 Nos.	
	xiv. 3.3k Ω	6 Nos.	6 Nos.	
	xv. 4.7 k Ω	6 Nos.	6 Nos.	
	xvi. 5k Ω	6 Nos.	6 Nos.	
	xvii. 10k Ω	6 Nos.	6 Nos.	
	xviii. 1m Ω	6 Nos.	6 Nos.	
	xix. 220 Ω	6 Nos.	6 Nos.	
	xx. 33 Ω	6 Nos.	6 Nos.	
	xxi. 10 Ω	6 Nos.	6 Nos.	
	xxii. 2 k Ω	6 Nos.	6 Nos.	
	xxiii. 22 k Ω	6 Nos.	6 Nos.	
	xxiv. 10 k Ω 2W Potentiometer	2 No.	2 No.	
	xxv. 5 k Ω 2W Potentiometer	2 No.	2 No.	
20.	Capacitor			
	i. 1 μ F 25V – Electrolytic	6 Nos.	6 Nos.	
	ii. 0.001 μ F	6 Nos.	6 Nos.	
	iii. 0.01 μ F	6 Nos.	6 Nos.	
	iv. 0.0033 μ F	6 Nos.	6 Nos.	
	v. 0.022 μ F	6 Nos.	6 Nos.	
	vi. 0.1 μ F	10 Nos	10 Nos	
21.	Inductor : 10 mH coil	6 Nos.	6 Nos.	
22.	Time Watch	1 No.	1 No.	

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IV Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

IC 1252 – Control Systems Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	DC servo motor Tachometer Multimeter Stop watch	minimum of 100w – field separately excited – loading facility – variable voltage source - 1 No 1 No 2 Nos 1 No	1 No 1 No 5 Nos. 3Nos	
2.	AC Servo Motor Tachometer Stopwatch Voltmeter	Minimum of 100w – necessary sources for main winding and control winding – 1 No 1 No 1 No 1 No	1 No 5 Nos. 3 Nos. 1 No	
3.	Rigged up models of type-0 and type-1 system using analog components Variable frequency square wave generator and a normal CRO (Or) DC source and storage Oscilloscope	- 1 No	1 No	
4.	System with MATLAB / MATHCAD (or) equivalent software	minimum 3 user license	10 Mat Lab	
5.	System with MATLAB / MATHCAD (or) other equivalent software	minimum 3 user license	10 Mat Lab	
6.	Analog Rigged up modules of a linear system (For closed loop operation) Variable R, L and C boxes Square wave generator and a CRO (or) DC voltage source and storage oscilloscope	- Each 2 Nos 1 No	2 Nos. 1 No.	

7.	<p>Rigged up module of P, PI and PID controller using analog components Rigged up module of I order system (with loop closing facility) Variable R, L and C boxes – 2 each (or) Process control trainer with all the above features</p> <p>CRO and a square wave generator (or) DC source and a storage oscilloscope</p>	1 No	1 No	
8.	System with MATLAB / MATHCAD / equivalent software	Minimum 3 user license	10 Mat Lab	
9.	<p>A complete closed loop position / speed / Temperature or equivalent system with two detachable controller units.</p> <p>CRO</p>	- 1 No	 1 No	
10.	<p>Synchronous (transmitter and Receiver) Rheostat Multimeter</p>	<p>1 set 1 No 1 No</p>	<p>1 Set 1 No 1 No</p>	

Faculty of Electrical Engineering
IV Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)
EC 1262– Electronic Devices and Circuits Laboratory
Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Regulated Power Supply	15	15	
2.	Dual Trace CRO (20 MHz)	15	16	
3.	Function Generator	15	18	
4.	3 ^{1/2} Digit digital multimeter	10	11	
5.	Bread Boards	40	40	
6.	Transistor	25 Nos.	25 Nos.	
7.	JFET	10 Nos.	10 Nos.	
8.	Diode	10 Nos.	10 Nos.	
9.	Zener Diode	5 Nos.	25 Nos.	
10.	UJT	5 Nos.	25 Nos.	
11.	Photo Diode	5 Nos.	5 Nos.	
12.	Photo Transistor	5 Nos.	5 Nos.	
13.	Thermistors	5 Nos.	5 Nos.	
14.	OP-amp	10 Nos.	25 Nos.	
15.	Milli Ammeter (0-100mA)	15 Nos.	20 Nos.	
16.	Micro Ammeter (0-50μA)	10 Nos.	10 Nos.	
17.	Low range voltmeter (0-30V)	10 Nos.	20 Nos.	
18.	Resistor of various ranges	50 Nos.	50 Nos.	
19.	Capacitors of various ranges	50 Nos.	50 Nos.	
20.	Connecting wires	Sufficient Nos	Available	

Faculty of Electrical Engineering

V Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

EE 1304 - Electrical Machines Laboratory – II

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	DC shunt motor coupled three phase alternator	2	5	
2.	Synchronous motor coupled to DC motor	1	1	
3.	Three phase induction motors- Squirrel cage Slip ring	2 1	3 1	
4.	DC Shunt motor coupled salient pole three phase alternator	1	4	
5.	Single phase induction motors	2	3	
6.	Air core inductor to do ZPF	1	2	
7.	Starter- Three phase induction motor starters Single phase induction motor starters	1 1	3 1	
8.	Meters- Voltmeter (AC) Ammeter (AC) Wattmeter (l _{pf}) Wattmeter (u _{pf})	15 15 15 30	34 47 18 30	
9.	Single phase auto transformer	2	5	
10.	Three phase auto transformer	4	4	
11.	Rheostats of various range	30	50	
12.	DC panel boards (220V, 36V)	1 each	1 each	
13.	AC panel board	1	1	
14.	Work tables	12	14	

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V Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

CS 1262– Object Oriented Programming Laboratory (exercise on Application of C++)

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
	Hardware Required			
1.	Computer(Pentium 4)	40 Nos with one server	40 Nos with one server	
2.	Dot matrix printer	3 Nos	3 Nos	
3.	Laser Printer	2 Nos	2 Nos	
4.	UPS (5 KVA)	2	2	
	Software Required			
5.	Turbo C	40 Nodes	40 Nodes	
6.	JDK 1.3	40 Nos	40 Nos	

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V Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)
EE 1303 - Power Electronics Laboratory
Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Device characteristics (for SCR, MOSFET, TRIAC and IGBT) kit with built in power supply & meters	2 each	2 each	
2.	SCR firing circuit module	2	2	
3.	Single phase SCR based ½ controlled converter & fully controlled converter along with built-in / separate / firing circuit / module and meter	2 each	2 each	
4.	MOSFET based step up and step down choppers	1 each	1 each	
5.	IGBT based single phase PWM inverter module	2	2	
6.	IGBT based three phase PWM inverter module	2	2	
7.	IGBT based high switching frequency chopper module with built-in controller	2	2	
8.	Resonant DC-DC converter module with built in power supply and controller	2	2	
9.	SCR & TRIAC based 1 phase A.C.phase controller along with lamp or rheostat load	4	4	
10.	SCR based V/I commuted chopper module with relevant firing module (separate or built-in)	4	4	
11.	Dual regulated DC power supply with common ground	4	6	
12.	Cathode Ray Oscilloscope	5	9	
13.	Isolation Transformer	5	5	
14.	Single phase Auto transformer	3	3	
15.	Components (Inductance, Capacitance)	3 sets for each	5 sets for each	
16.	Multi meter	5	5	
17.	LCR meter	3	4	
18.	Rheostats of various ranges	2 sets of 10 value	2 sets of 10 value	
19.	Work tables	12	12	
20.	DC and AC meters of required ranges	20	26	

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V Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

EC 1314 - Integrated Circuits Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Interface such as, A/D, D/A converter, DMA, PIC Serial, Interface, Temperatures controller, Stepper motor, Key board	4 each	5 each	
2.	CRO and function generator	3 each	3 each	
3.	IC trainer Kit	15	15	
4.	Analog AC trainer kit	4	6	
5.	Components and bread boards	10 each	10 each	
6.	Chips IC – 7400	10	40	
7.	Chips IC – 7402	10	40	
8.	Chips IC – 7408	10	40	
9.	Chips IC – 7432	10	40	
10.	Chips IC – 7410	25	40	
11.	Chips IC – 555	10	40	
12.	Chips IC – 741	10	40	
13.	Chips IC – 74153	10	40	
14.	Chips IC – 7474	10	40	
15.	Chips IC – 7490	10	40	
16.	Chips IC – 7447	10	40	
17.	Chips IC – 7476	10	40	
18.	Chips IC – 7420	10	40	

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
19.	Chips IC – 7404	15	40	
20.	Chips LM – 317	10	25	
21.	Chips LM – 723	10	25	
22.	Chips MA – 7840	10	10	
23.	Chips LM – 380	10	10	
24.	Chips ICL - 8038	10	10	
25.	Traffic light control kit	2	5	
26.	VDU	2	2	
27.	7 segment Display	5	40	
28.	Interfacing card such as keyboard etc.	3 each	3 each	
29.	Work tables	15	15	

Faculty of Electrical Engineering

V Semester B.E. Electrical and Electronics Engineering (Modified R 2004)

Communication Skills Laboratory

Requirement for a batch of 60 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Server	1 No.	1 No.	
	o PIV system			
	o 1 GB RAM / 40 GB HDD			
	o OS: Win 2000 server			
	o Audio card with headphones (with mike)			
	o JRE 1.3			
2.	Client Systems	60 No.	60 No.	
	o PIII or above			
	o 256 or 512 MB RAM /40 GB HDD			
	o OS: Win 2000			
	o Audio card with headphones (with mike)			
	o JRE 1.3			
3.	Softwares			
	a) Interactive Teacher Control Software	Available		
	b) English Language Lab Software	Available		
	c) Career Lab software	Available		
4.	Handicam Video Camera (with video lights and mic input)	1 No.	1 No.	
5.	Television - 29"	1 No.	1 No.	
6.	Collar mike	1 No.	1 No.	
7.	Cordless mikes	1 No.	1 No.	
8.	Audio Mixer	1 No.	1 No.	
9.	DVD Recorder / Player	1 No.	1 No.	
10.	LCD Projector with MP3 /CD /DVD provision for audio / video facility - Desirable	1 No.	Available	

Faculty of Electrical Engineering
VI Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)
EI 1362 - Measurements & Instrumentation Laboratory
Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1	LVDT kit	1 No.	1 No.	
2	Multimeter	8 No.	9 No.	
3	Bourdon pressure transducer kit	1 No.	1 No.	
4	Foot pump	1 No.	1 No.	
5	Voltmeter	4 No.	20 No.	
6	Maxwell's inductance Capacitance Bridge kit	1 No.	2 No.	
7	Unknown Inductance	1 No.	2 No.	
8	Schering Bridge kit	1 No.	1 No.	
9	Unknown capacitance	1 No.	2 No.	
10	Wheat stone Bridge kit	1 No.	2 No.	
11	Unknown resistance	1 No.	2 No.	
12	Kelvin Double bridge kit	1 No.	2 No.	
13	Unknown resistance	1 No.	2 No.	
14	Operational Amplifier	1 No.	1 No.	
15	Resistors	3 No.	25 No.	
16	RPS	4 No.	6 No.	
17	IC 741	2 No.	5 No.	
18	DC trainer kit	2 No.	2 No.	
19	CRO	2 No.	9 No.	
20	Resistance	1 No.	5 No.	
21	Capacitance	1 No.	3 No.	
22	Energy meter	1 No.	4 No.	
23	Wattmeter	2 No.	2 No.	
24	Stop watch	1 No.	1 No.	
25	M.I Ammeter	2 No.	25 No.	
26	M.I Voltmeter	2 No.	20 No.	
27	Current Transformer	1 No.	1 No.	
28	Lamp Load	1 No.	4 No.	
29	Ammeter	2 No.	25 No.	
30	3 phase Auto transformer	1 No.	1 No.	
31	Maxwell bridge set up	1 No.	2 No.	

32	Ring specimen	1 No.	1 No.	
33	Galvanometer	1 No.	2 No.	

Faculty of Electrical Engineering

VI Semester B.E. – Electrical and Electronics Engineering (Modified R 2004)

EC 1363 - Microprocessor & Micro controller Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	8085 Microprocessor Trainer with Power supply	10	30	
2.	8051 Micro controller Trainer Kit with power supply	10	15	
3.	8255 Interface board	5	5	
4.	8251 Interface board	5	5	
5.	8259 Interface board	5	5	
6.	8279 Keyboard/Display Interface Board	5	5	
7.	8253 timer counter	5	5	
8.	ADC and DAC card	5 each	5 each	
9.	Stepper motor with Controller	1	5	
10.	Traffic Light Control System	1	5	
11.	Regulation power supply	1	5	
12.	Universal ADD-ON modules	3	3	
13.	8 Digit Multiplexed Display Card	2	2	
14.	Function Generator	3	4	
15.	Multimeter	3	3	
16.	C Compilers	2	2	
17.	KEIL or RIDE software	2 license	2 license (RIDE)	

Faculty of Electrical Engineering

VII Semester B. E. – Electrical and Electronics Engineering (R 2004)

EE 1404 - Power System Simulation Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Personal computers (Pentium-IV, 80GB, 512 MBRAM)	25	25	
2.	Printer laser	1	1	
3.	Dotmatrix	1	1	
4.	Server (Pentium IV, 80GB, 1GBRAM) (High Speed Processor)	1	1	
5.	Software: E.M.T.P/ETAP/CYME/MIPOWER /any power system simulation software	5 licenses	Available	
6.	Compilers: C, C++, VB, VC++	25 users	25 users	