

# Index

## Symbols

(+) Amphetamine sulphate, 333  
(+)-2-Amino-Butan-1-ol, 16  
1 : 10-phenanthroline, 334  
1, 10-phenanthroline, 400  
1, 4-benzodiazepines, 495, 497  
1-ethylpiperidinium benzyl penicillin, 184  
1-o-methyl  $\alpha$ -D-glucopyranoside, 349  
<sup>13</sup>C-NMR Spectroscopy, 347  
14C-phenobarbital, 500  
2, 4, 6-tribromophenol, 213  
2, 4, 6-tribromophenol, 218  
2-Methyl-1-butanol, 276  
2.5d rule, 86  
2D-NMR, 347  
2D-NMR COSY spectrum of 1-0-methyl  $\alpha$ -D-glucopyranoside, 350  
3-aminopropanol in dexampantanol, 425  
3-Hemisuccinyloxyflurazepam, 497  
3-Hydroxyflurazepam, 497  
3-o-carboxymethyl-morphine, 493  
3,3'-diaminobenzidine, 39  
3,4-diaminophenylpiaselenol, 39  
3H-dihydromorphine Solution, 494  
3H-flunisolide, 501  
3H-labelled clonazepam, 495  
4-Aminophenol, 15  
4-Chloro-N-furfuryl-5-sulphamoylanthranilic acid, 470  
4d rule, 86  
5-allyl-5-(1-p-nitrophenyloxycarbonylisopropyl), 499  
6-aminopenicillanic acid (6-AMP), 469  
6-AMP, 469  
6-Nitro-2, 4-phenol disulphonic acid, 309  
8-hydroxy quinolate complex, 403  
8-hydroxyquinoline (oxine), 179

## A

$\alpha$ -Naphtholbenzein, 110  
Abbe' refractometer, 268, 270  
Absolute error, 74  
Absorption bands, 297  
Absorption spectra, 358  
Acacia, 19, 20  
Accuracy, 74  
Acetarsol, 34, 141

Acetate, 228, 376  
Acetazolamide, 119  
Acetomenaphthone, 135  
Acetylacetonate, 399  
Acetylacetone, 334  
Acetylated cellulose, 415  
Acetylcysteine, 280  
Acetylpyridinium chloride, 187  
Acetylsalicylic acid, 104  
Acid base titrations, 257  
Acid complex, 186  
Acid ointment (For, 216  
Acid zirconyl alizarin solution, 38  
Acid-catalysed equilibrium reaction, 55  
Acid-insoluble ash, 22, 23  
Acid-soluble matter, 18  
Acidimetry in non-aqueous titrations, 111  
Acidimetry in non-aqueous titrations, 110  
Activated carbon, 415  
Activated charcoal, 24, 388  
Activated dimethicone, 331  
Activation of adsorbent, 417  
Additive errors, 73  
Adrenaline, 16, 112, 279  
Adsorption effects, 432  
Adverse drug reaction, 10  
Ag in cisplatin, 387  
Agarose, 476  
Agarose FC, 478  
Alanine, 280  
Alexandrian senna fruit, 23  
Alicylaldehyde oxime, 256  
Aligning tray, 412  
Alkalimetric assays, 119  
Alkalimetry in non-aqueous titrations, 110, 117  
Alkaline cleansing agents, 52  
Alkaline phosphatase (AP), 59, 66  
Alkaloids, 468, 468  
Allopurinol, 119, 250  
Aloin, 23  
Alternating current arc, 362  
Aluminium glycinate, 170  
Aluminium hydroxide, 31  
Aluminium hydroxide, 175  
Aluminium hydroxide gel, 31, 32  
Aluminium oxide, 413

- Aluminium oxide ore, 414  
Aluminium silicate, 414  
Aluminium sulphate, 170  
Aluminium-oxinate, 179  
Aluminium-oxine, 179  
Amantadine hydrochloride, 115  
Amino benzoic acid, 426  
Aminocaproic acid, 112  
Aminophenol, 15  
Aminophylline, 157, 425, 427  
Aminosalicylate, 31  
Amitriptyline, 60  
Amitriptyline hydrochloride, 115  
Ammonia solution, 21  
Ammonium chloride, 24, 32, 154  
Ammonium Iron (II) sulphate solution, 406  
Ammonium purpurate, 165  
Ammonium thiocyanate-silver nitrate titrations, 155  
Amobarbital sodium, 182  
Amodiaquine hydrochloride, 182, 311  
Amoxicillin sodium, 280, 447  
Amoxicillin trihydrate, 307  
Amperometric, 465, 267  
Amperometric detector, 465  
Amperometric end-point, 226  
Amperometric methods, 253, 254, 255, 256  
Amperometric titration, 254, 255, 257, 260  
Amperometry, 253  
Amphetamines, 353  
Amphiprotic solvents, 107  
Ampicillin, 280, 311  
Ampicillin sodium, 280, 330  
Amylobarbitone, 119, 330  
Amylobarbitone sodium, 18  
Anaesthetic ether, 11, 21  
Anaesthetic ether, 11, 21  
Analgin, 14, 15, 140  
Analysis sample, 7  
Analyzing rotator prism (Nicol), 277  
Anhydrous citric acid, 36  
Anhydrous citric acid, 36  
Aniline-phthalate reagent, 424  
Aniseed, 23  
Aniseed oil, 271  
Analytical instrumentation, 69  
Antibodies, 486  
Antibody-bound morphine, 493  
Antigen, 486  
Antigenic determinants, 487  
Antihistamines, 353  
AOAC, 7  
APHA, 7  
Apiezon L-grease, 437  
Apomorphine hydrochloride, 251, 280  
Applicability of radioimmunoassay, 492  
Applications of TLC in pharmaceutical analysis, 425  
Aquametry, 20  
Aqueous titrations, 95  
Aqueous-organic type of extraction, 393  
Arachis Oil, 11, 12  
Area normalization, 442, 443  
Area normalization method, 443, 444  
Argentometric analysis, 152  
Argentometric methods, 151  
Argentometric titrations, 152  
Arsenic limit test apparatus, 27  
Arsenic trioxide, 76  
Ascorbic Acid, 14, 142, 280, 388  
Ash value (total ash), 22  
Aspirin, 4, 10, 11, 14, 15, 104, 331  
Aspirin tablets, 104  
Assay by non-aqueous titrations, 110  
Assay methsuximide and phensuximide, 354  
Assay of barium, potassium and sodium in calcium acetate, 375  
Assay of cherry juice for malic acid, 129  
Assay of drugs, 98  
Assay of iodine values of natural oils, 355  
Assay of meclizine and methaqualone, 355  
Assay of meprobamate and mebutamate, 354  
Assay of palladium in carbenicillin sodium, 387  
Assay of phosphate ion ( $\text{PO}_4^{3-}$ ), 290  
Assay of sodium nitrite, 130  
Assay of sodium, potassium and calcium in blood serum and water, 375  
Assay of sulphate ion ( $\text{SO}_4^{2-}$ ), 289  
Assay of trimethoprim and sulphamethoxazole, 354  
Assay of total zinc in insulin zinc suspension, 387  
Assays of other body fluids, 41  
Assignment of bands to specific groups by affecting chemical changes, 336  
Assignment of bands to specific groups by employing isotopes, 336  
ASTM, 7  
Asymmetrical stretching, 317  
Atenolol, 474  
Atomic absorption spectroscopy (AAS), 295, 370, 378, 379, 383  
Atomic emission spectroscopy (AES, ESS, ICP), 295  
Atomic fluorescence spectroscopy (AFS), 295  
Atomic refractivities, 267  
Atomic-absorption methods, 393

- Atropine methobromide, 279  
Atropine methonitrate, 279  
Atropine, 503  
Atropine sulphate, 4, 279, 425, 428  
Auto analyzer, 66, 67  
Automated electrochemical Karl Fischer analysis, 225  
Automated methods of clinical analysis, 53, 41, 66  
Automatic fraction collector, 479  
Automatic pipettes, 48  
Automatic recorder, 479  
Automatic titrator, 249  
Average deviation, 78  
Azathioprine, 251  
Azobilirubin, 57
- B**
- B-bands, 297, 298  
B-Hydroxypropyltheophylline, 471, 472  
Back titration, 42  
Baclofen, 425  
Ball and disk integrator, 442  
Band spectra, 358  
Barbiturate, 5-allyl-5-(1-carboxyisopropyl) barbit, 499  
Barbiturates, 493, 499  
Barbiturates, 353  
Barium sulphate (radio-opaque medium), 18, 28, 37, 175, 180  
Base, 107  
Base-line method, 328, 327  
Bauxite, 414  
Beckman DU series 60 spectrophotometer, 304  
Beclomethasone dipropionate, 280  
Beer-Lambert's law, 54, 287  
Beer's law, 54, 286, 406, 407  
Beer's plot, 54, 287  
Bending (or deformation) vibrations, 316, 317  
Bending and stretching vibrations, 317  
Bendrofluazide, 4, 119, 251  
Bendroflumethiazide, 57  
Benethamine penicillin, 280  
Bentonites, 414  
Benzalkonium chloride, 219, 220  
Benzethonium chloride, 187, 188  
Benzoate, 113  
Benzocaine, 31  
Benzoic acid, 26, 28, 76, 103  
Benzoin  $\alpha$ -oxime ion, 256  
Benzthiazide, 57  
Benztropine mesylate, 426  
Benzyl alcohol, 11, 12  
Benzylhydrazine, 209  
Benzylpenicillin, 142, 184  
Benzyl penicillin potassium, 280  
Benzylpenicillin sodium, 184  
Benzylpenicillic acid, 142  
Benzyltrimethyl, 154  
Bephenium, 112  
Bephenium hydroxy-napthoate, 31  
Bephenium hydroxynapthoate, 13, 112  
Bessey-lowry activity, 60  
Beta-energy emitting isotopes, 491  
Betamethasone, 4, 14, 280, 330  
Betamethasone sodium phosphate, 18, 20, 311  
Betamethasone valerate, 428, 474, 330, 425  
Bethanechol chloride, 187  
Bethanidine sulphate, 112  
Biamperometric titrations, 257, 260  
Bilirubin, 57, 66  
Bioavailability, 9, 10  
Biochemicals, 453  
Biological fluids, 466  
Biological response, 5  
Biomedical analytical chemistry, 41, 42, 53, 56  
Bisacodyl, 112, 251, 427  
Bismuth subcarbonate, 35, 170  
Blank determination, 76  
Blank Titration, 9, 112  
Blood urea nitrogen (BUN), 66  
Bohr's equation, 371  
Bohr's theory, 359  
Boiling point, 11  
Bolometers, 324  
Boltzmann equation, 372  
Bonded-phase supports, 453  
Boric acid, 17, 26  
Boron, 37  
BPCRS, 71, 76  
Broad-based highest attainable standard, 4  
Bromide, 157  
Bromination, 423  
Bromine, 38  
Bromochloromethane, 276  
Bromopheneramine maleate, 448  
Bronopol, 448  
Buclizine hydrochloride, 474  
Buffering materials, 410  
Bulk-property detectors, 461  
Burettes, 45  
Busulphan, 4, 102  
Butan-1-ol, 16  
Butyric Acid, 271

**C**

- Caffeine, 4, 11, 331, 471  
Caffeine hydrate, 19, 20  
Calamine, 101  
Calcite prism, 277  
Calcium, 31  
Calcium acetate, 35  
Calcium acetate monohydrate, 199  
Calcium aminosaliclate, 207, 209  
Calcium carbonate, 29, 33, 167, 414  
Calcium chloride, 26, 166  
Calcium gluconate, 26, 31, 33  
Calcium hydrogen phosphate, 34  
Calcium hydroxide, 28, 414  
Calcium lactate, 19, 28, 29, 33  
Calcium lactate pentahydrate, 20  
Calcium lactate trihydrate, 20  
Calcium levulinate, 4  
Calcium-murexide, 165  
Calcium oxalate, 175, 414  
Calcium pantothenate, 26, 280  
Calcium phosphate, 34  
Calcium silicate, 414  
Calcium sulphate, 414  
Calibration curves, 63, 383  
Calibration of infrared spectrophotometers, 330  
Calibration of instruments, 75  
Calomel, 241  
Cancer, 486  
Carbamazepine, 4, 311, 425  
Carbenicillin disodium, 330  
Carbenicillin sodium, 388  
Carbidopa, 251, 280  
Carbimazole, 14, 311  
Carbohydrate, 486  
Carbon-13 NMR spectroscopy, 348  
Carbonate, 29  
Cardamom fruit (of the seeds), 23  
Carteolol, 486, 493  
Castor oil, 11, 12  
Catechu, 23  
Cd and Pb in zinc oxide, 387  
Cellulose, 415  
Cellulose acetate, 103  
Cellulose ion-exchange powder, 415  
Cemetidine, 330  
Centrifugal chromatography, 421  
Cephalexin, 24, 281  
Cephalosporin antibiotics, 469  
Cephalosporin C, 470  
Cephalosporins, 353, 469  
Ceric sulphate titration methods, 126, 133  
Cetostearyl alcohol, 446  
Cetrimide, 219, 221  
Charcoal, 415  
Chelate, 162, 320  
Chelate complex, 163, 164  
Chemical interference due to cations, 386  
Chemical interferences, 385, 386  
Chemical interferences due to anion ( $\text{PO}_4^{3-}$ ), 386  
Chemical purity, 5  
Chemical reactions on TLC plates, 422  
Chemical shift, 344, 351  
Chemically inert stationary phase, 411  
Chemiluminescent species, 441  
Chloral hydrate, 153  
Chlorambucil, 427  
Chloramine, 17  
Chloramphenicol, 4, 31, 281, 311, 425, 468  
Chloramphenicol and tetracycline, 10  
Chloramphenicol palmitate, 311  
Chlordiazepoxide, 112, 493, 497, 498, 499  
Chloride, 116  
Chlorine, 38  
Chloridine hydrochloride, 250  
Chlorinated lime, 144  
Chlorobutol, 155  
Chlorocresol, 21, 219  
Chloroform, 11, 21, 39  
Chloroform in colchicine by head-space gas chromatograph, 449  
Chlorophenol, 16  
Chlorophenothane, 157  
Chlorophensin, 16  
Chloroquine phosphate, 330  
Chloroquine sulphate, 330  
Chlorotetracycline Hydrochloride, 19  
Chlorothiazide, 57  
Chlorpheniramine maleate, 14  
Chlorpromazine, 57  
Chlorpromazine hydrochloride, 115  
Chlorpropamide, 103  
Chlortetracycline, 287, 288  
Chlorthalidone, 120  
Choice of adsorbents, 413  
Choice of indicators, 110  
Choice of solvent system in TLC, 415  
Cholecalciferol, 299  
Cholesterol, 57, 58, 66, 185  
Choline chloride, 187  
Chromatags, 467  
Chromatographic column, 437

- Chromatographic methods of analysis, 395  
Chromatographic techniques, 393  
Chromic acid mixture, 51  
Chromophore, 301  
Cimetidine hydrochloride, 251  
Cindamycin hydrochloride, 281  
Cis-Diethylstilboesterol, 311  
Cis-trans isomer ratio in clomiphene citrate, 333  
Cisplatin, 388  
Citral, 422  
Citric acid, 103  
Citrus oils, 423  
Clarity and colour of solution, 14  
Classical amperometric titration, 260  
Classification of errors, 72  
Cleaning of volumetric apparatus, 51  
Clindamycin hydrochloride, 449  
Clioquinol, 38  
Clofazimine, 330  
Clofibrate, 330  
Clonazepam, 493, 499  
Clonazepam-bovine-serum-albumin-conjugate, 495  
Clonidine hydrochloride, 115, 330  
Clonidine hydrochloride, 251, 330  
Cloramphenicol, 10  
Close-response curve, 489  
Clove oil, 271  
Cloxacilline sodium, 331, 447  
Co-ordination compound, 29  
Coalescence, 402  
Coalescence of an emulsion, 401  
Coating the droplets, 402  
Cocaine, 281  
Codeine, 468  
Codeine, 425, 468, 487  
Codeine phosphate, 112, 331  
Coefficient of variation, 78  
Cognate assays, 167, 181, 188  
Colchicine, 114, 281  
Colchicine cyclophosphamide, 331  
Colomel electrode, 237  
Colonazepam, 495  
Colophony, 24  
Colorimetric assays, 41, 53, 287  
Colorimetric assays involving complexation reactions, 56  
Colorimetric assays involving redox reactions, 56  
Colorimetric assays of biochemicals, 56  
Colorimetric assays of enzyme levels, 56  
Colorimetry, 293, 425  
Colour tests, 17  
Colouration of complexes, 164  
Coloured substances, 423  
Column chromatography, 423  
Column efficiency, 434  
Column performance, 460  
Combined RIA technique-isotope dilution, 502  
Common ion effect, 176  
Comparison method, 442, 445  
Comparison of results, 77, 81  
Competitive protein binding assay, 63  
Complex, 161  
Complexation, 200  
Complexation reaction, 235, 236  
Complexometric analysis, 161  
Complexometric titrations, 165  
Compound benzoic acid ointment, 216  
Computation rules, 80  
Computer technology, 69  
Conductance-function, 464  
Conductometric, 465  
Conjugate acid-base pair, 95  
Conjugated systems, 298  
Conjugation effect, 321  
Constant errors, 72  
Constant-flow pump, 457  
Constant-pressure pump, 457  
Continuous spectra, 358  
Continuous TLC, 419  
Control of microbiological processes, 468  
Co-ordination compound, 29  
Coppe sulphate, 388  
Coriander, 23  
Correlation spectroscopy, 349  
Corticoid, 500  
Corticosteroids, 472  
Corticotrophin, 480  
Cortisol (in plasma), 64  
Cortisone, 472, 472  
Coupling constant (J), 351  
Cream/ointment, 332  
Creatine, 59  
Creatine phosphokinase (CPK), 59, 66  
Criteria for rejection of an observation, 77  
Criteria of rejecting an observation, 85  
Critical angle, 265, 266  
Critical micelle concentration (CMC), 271  
CRM, 76  
Cross-checking Results, 76  
Cross-linked, 479  
Cross-linked dextran gels, 476  
Crystal violet, 18, 110  
Crystalline membrane electrodes, 244, 246

- Cu, Pb and Zn in activated charcoal, 387  
Cupferrate, 400  
Cut off level, 487  
Cyanocobalamine, 311  
Cyclizine hydrochloride, 114  
Cyclizine lactate inj., 332  
Cyclobarbitone, 214  
Cyclobarbitone tablets, 216  
Cyclophosphamide injection/tablets, 332  
Cyclothiazide, 57  
Cyproheptadiene, 115  
Cyproheptadine hydrochloride, 331, 426  
Cytarabine, 281
- D**
- D-penicillamine, 142  
D-propranolol, 504  
Dansyl chloride, 467  
Dapsone, 207, 211  
Data handling device, 466  
Dead-stop end-point technique, 208  
Dead-stop-end-pointmethod, 257, 260  
Decreased mesomeric effect, 322  
Deformation, 316, 317  
Degassing, 456  
Degassing the mobile-phase, 456  
Degrees of freedom, 82  
Dehydroemetine hydrochloride, 115  
Dementholised, 279  
Demerits of Lowry-Bronsted Theory, 97  
Demoxepam, 499  
Densitometry, 425  
Deoxycortisone, 472, 472  
Dequalinium chloride, 116  
Description of the drug or finished product, 6  
Deslanoside, 281, 312  
Detection limit, 384, 411  
Detection of components, 423  
Detector in HPLC, 461  
Detectors, 324, 361, 479  
Determinate (systematic) errors, 8, 72  
Determination of water content, 20  
Determination of water in a drug, 449  
Development of thin layers, 418  
Dexamethasone, 4, 281, 331  
Dexamethasone sodium phosphate, 20, 312  
Dextran gels, 415  
Dextran polymer gels, 477  
Dextran-coated chrocoal suspension, 494  
Dextrose, 26, 31, 33  
Diatomaceous earth, 414  
Diatrizoate sodium, 154  
Diazepam, 114, 499  
Diazonium salt, 208  
Diazotization, 207  
Diazoxyde, 24  
Dibasic calcium phosphate, 33, 167  
Dicalcium phosphate, 414  
Dichlorphenamide, 473  
Dichromate methods, 126, 130  
Diclofenac sodium, 5  
Dicloxacillin, 447  
Dicloxacillin Sodium, 281, 447  
Didesethylflurazepam, 497  
Diethyl toluamide, 4  
Diethylpropion hydrochloride, 38  
Differential thermal analysis, 193, 198, 200  
Differential thermal analyzer, 198  
Digitalis glycosides sennosides, 468  
Digitalis leaf, 23  
Digitonin, 16, 185  
Digitoxin, 16, 281, 312, 468  
Digoxin, 14, 15, 468  
Dihydrotachysterol, 279  
Diiodohydroxy quinoline, 146  
Dill oil, 271  
Diloxanide furoate, 120  
Diluted Isosorbide, 310  
Diluted isosorbide dinitrate, 310, 331  
Dimenhydrinate, 157  
Dimeric association, 321  
Dimethylglyoxime, 256  
Dimethylglyoxime complex, 406  
Dimethylglyoxime ion, 256  
Dinitrate, 310  
Diode array detector, 462  
Diol, 251  
Diphenhydramine hydrochloride, 116  
Diphenoxylate hydrochloride, 114  
Diphenylpyraline hydrochloride, 331  
Dipping, 411  
Direct current arc, 362  
Direct method of iodimetry, 137  
Direct methods, 425  
Direct potentiometry, 234  
Direct titration method, 98, 99  
Direct titration methods, 98, 99, 101, 102, 128, 166  
Direct titration with iodine, 138  
Direct titration with silver nitrate, 152, 153  
Disodium edetate, 169  
Disodium ethylene-diaminetetraacetate, 161, 162  
Distribution Coefficient (KD), 394, 478

- Distribution of random errors, 77  
Distribution of random numbers, 79  
Disulfiram, 251  
Dithizone, 169, 400, 404  
Dithizone method, 403, 404  
Dithranol, 12, 312  
Double beam spectrophotometers, 305  
Double beam atomic absorption spectrophotometer, 380, 382  
Double-beam infrared spectrophotometer, 326  
Double-beam spectrophotometer, 303, 304, 305  
Double-monochromator infrared spectrophotometer, 323, 326  
Doublet of doublets, 351  
Doxycycline, 287, 288  
Doxycycline hydrochloride, 38  
Dragendorff's reagent, 424  
Dried aluminium hydroxide, 170  
Dried calcium sulphate, 22  
Drop chromatography, 410  
Drostanolone propionate, 19  
DTA, 193, 198  
Duboscq colorimeter, 285  
Dye-metal complex, 165  
Dynamic thermogravimetric analysis, 194
- E**
- E-bands, 297, 298  
Eagle arrangement, 367  
Easy visualization of separated components, 411  
Ebert-mounting spectrograph, 367, 368  
ECRM, 76  
Eddy diffusion, 433, 434  
Edetate disodium, 34  
EDTA, 162  
Effect of concentration on line and band spectra, 360  
Effect of ion-pair formation, 397, 399  
Effect of pH on complexation, 163  
Effect of pH on extraction, 397, 398  
Effect of synergistic extraction, 397, 400  
Effect of temperature and inert solutes, 397  
Effect of temperature on assays, 110  
Effectiveness of an extraction, 395, 396  
Electrochemical detector, 462, 465  
Electrode, 233  
Electrodes, 361  
Electromagnetic Spectrum, 293, 294  
Electron capture detector (ECD), 437, 438, 440  
Electron spin resonance (ESR), 295  
Electron-capture GC-technique, 497  
Electronic effects, 319, 321  
Electronic energy, 299  
Electronic integrator, 442  
Electrothermal device, 378  
Elimination of interference due to coloured drugs, 60  
Eluotropic series, 415, 416, 417  
Emetine hydrochloride, 281  
Emission spectra, 358, 366  
Emission spectroscopy, 357, 358  
Emission spectroscopy of sodium vis-a-vis uranium, 360  
Empirical ratio method, 327  
Empirical calibration curve (ECC), 383  
Enhanced mesomeric effect, 322  
Enzymatic assays, 53, 58  
Enzymatic reaction, 423  
Enzyme concentration in large excess, 59  
Enzymes, 486  
EPCRS, 72, 76  
Ephedrine, 31, 33, 101, 281  
Ephedrine hydrochloride, 18  
Equilibration of the chamber, 419  
Equivalence point, 42  
Equivalent, 44  
Equivalent responses, 480  
Equivalent weight of a reducing agent, 43  
Equivalent weight of an oxidizing agent, 43  
Ergocalciferol, 281, 299  
Ergometrine maleate, 12, 112  
Ergosterol, 299  
Ergotamine tartrate, 312  
Eriochrome black T, 165  
Error due to the volume change, 395  
Errors due to methodology, 72  
Errors in pharmaceutical analysis, 71  
Errors in pharmaceutical analysis and statistical V, 71  
Erythromycin, 20, 26, 60, 281  
Erythromycin estolate, 331  
Esterification, 423  
Estimation of benzene in cyclohexane, 203  
Estimation of H<sub>2</sub>O and (CH<sub>3</sub>CO)<sub>2</sub>O concentrations in, 202  
Estimation of phenols and related compounds, 213  
Ethacrynic acid, 4, 12, 213, 215, 216  
Ethambutol hydrochloride, 12, 16, 112, 331  
Ethinylobstradiol, 251, 281, 312  
Ethionamide, 156  
Ethionamide tablets, 114  
Ethiosuximide, 331  
Ethipropazine HCl tablets, 312  
Ethinylestradiol, 331  
Ethisterone, 19  
Ethiopropazine, 57  
Ethosuximide, 118

- Ethylenediamine hydrate, 26  
Ethylmorphine, 116  
Ethyloestrenol, 446  
Ethinylestradiol, 19  
Etofylline, 251  
Eucalyptus oil, 15, 271  
Evaluation of the chromatogram, 424  
Excitation sources, 361  
Excitation-energy requirements, 360  
Experimental techniques of tlc, 411  
Experimental value, 74  
External indicator, 208  
Extraction coefficient, 398, 399  
Extraction system, 399
- F**
- F-Test, 81, 82  
Far infrared, 314  
Fe in ascorbic acid, 387  
Fenfluramine hydrochloride, 14, 15, 114  
Ferric ammonium Citrate, 144  
Ferric complex, 134  
Ferrous complex, 134  
Ferrous fumarate, 134  
Ferrous gluconate, 20, 26, 33, 36, 136  
Ferrous sulphate, 4, 28, 136  
Ferrous thioglycollate, 29  
Fick's law, 254  
Field effects, 319, 323  
Fingerprint region, 315, 335, 336  
Fingerprint technique, 340  
First derivative curve, 239  
First order electrodes, 242, 243  
Flame emission spectroscopy (FES), 370, 371, 372, 375, 379  
Flame ionization detector (FID), 437, 438, 439, 454  
Flame photometers, 372  
Flame photometric detector (FPD), 437, 441  
Flame photometry, 283, 370, 425  
Flame spectroscopy, 379  
Flames, 361  
Flow pattern effects, 433  
Flow-rate of the mobile-phase, 457  
Flucocinolone acetonide, 228  
Fludrocortisone Acetate, 19, 331  
Flunisolide, 493, 500  
flunisolide-bovine-serum-albumin conjugate, 501  
Flunitrazepam, 251  
Fluocinolone acetonide, 474  
Fluorescein sodium, 33, 180  
Fluorescence, 463, 465  
Fluorescence detector, 463, 471  
Fluorescence function, 464  
Fluorescent compounds, 463  
Fluorescent indicators, 419  
Fluoride-ion electrode, 246  
Fluorimetry, 425  
Fluorine, 38  
Fluorotags, 467  
Fluorouracil, 120  
Fluoxymesterone, 19  
Fluphenazine hydrochloride, 4, 116, 331  
Flurazepam, 493, 497  
Flurazepam in human plasma, 496  
Flurazepam metabolites, 497  
Folic acid, 308  
For  $\text{MaO}$ , 167  
Foreign alkaloids, 428  
Foreign alkaloids present in alkaloidal drugs, 428  
Foreign salts, 257  
Foreign steroids Present in steroidal drugs, 428  
Formazan derivative, 228  
Framycetin sulphate, 281  
Frangula bark, 24  
Free acids, 28  
Free energy, 401  
Free halogens, 38  
Frusemide, 31, 103, 470, 471  
Fuller's earth, 414  
Fundamental statistical parameters, 79
- G**
- $\gamma$ -Ray spectroscopy, 295  
Gallamine triethiodide, 114  
Gamma benzene hexachloride, 157  
Gamma counters, 491  
Gamma-energy emitting isotopes, 491  
Gardinol type detergents, 52  
Gas chromatography (GC), 432, 435, 445, 452  
Gas-liquid chromatography, 6, 20, 409, 445, 486  
Gas-liquid partition chromatography, 431  
Gas-permeable membrane, 247  
Gas-sensing electrode, 244, 247, 248  
Gas-solid adsorption chromatography, 431  
Gaussian distribution curve, 79  
GC-Computer System, 442  
Gel-chromatography, 476  
General considerations, 51  
Gentamycin, 287, 288  
Gentamycin sulphate, 20, 281  
Geometrical isomerism, 310  
Geranic acid, 422



- Geraniol, 422  
Ghost peaks, 459  
Glass electrode, 237  
Glass membrane electrodes, 244, 246  
Glibenclamide, 14, 15, 103  
Globar, 324  
Glucagon, 388  
Glucose, 66, 67  
Glucose oxidase, 59  
Glutamic acid, 425, 429  
Glutamic-oxaloacetic-transaminase (SGOT), 53  
Glutethimide, 251  
Glycerin, 31  
Glyceryl trinitrate, 309  
Glyceryl trinitrate tablets, 310  
Glycine, 334  
Glycobiarsol [bismethyl-N-glycolyl-arsanilate], 169  
Glycoside, 468, 468  
Golay detector, 324  
Gonadorelin, 20  
Grab sample, 7  
Graduated cylinders, 50  
Graduated pipettes, 46  
Gram-equivalent weight, 42  
Gram-milliequivalent Weight (GMEW), 44  
Graphical approach, 444  
Graphite electrodes, 363  
Graphite-tube furnace, 195  
Grating, 366  
Grating instrument, 367  
Grating monochromators, 365  
Gratings, 324, 366  
Gravimetric analysis, 8, 17, 41, 42, 53, 173  
Gravimetric factor, 177, 178  
Gravimetric techniques, 173  
Gravimetry, 425  
Griseofulvin, 4, 13, 24, 281, 312  
Gross sample, 7  
Group frequency region, 315  
Guanethidine sulphate, 112  
Gutzeit Test, 26
- H**
- Half-integral, 343  
Halogen detector, 440  
Halothane, 21  
Hapten, 486  
Hapten determinants, 487  
Head space gas chromatography, 449  
Heamatological assays, 41  
Heats of reaction, 200  
Heavy kaolin, 13, 28, 29  
Heavy magnesium carbonate, 28, 29  
Heavy magnesium oxide, 22, 26, 28, 29, 32, 167  
Heavy metals, 15  
Hexachloride, 157  
Hexamine, 169, 279  
High performance liquid chromatography, 6, 409, 452, 455  
High performance thin-layer chromatography (HPTLC), 6  
Highest attainable standard, 4  
Histamine, 186  
Histamine acid phosphate, 186  
Histamine H<sub>1</sub>-receptor antagonists, 58  
Histamine-nitranilic acid complex, 186  
Hollow-cathode-lamp, 381, 382  
Homatropine hydrochloride, 114  
Homologous morphine forms, 487  
Hooke's law, 336  
Horizontal TLC, 419  
Human insulin, 473, 480, 481  
hvdrocortisone acetate, 228  
Hydoxyl-apatite, 414  
Hydralazine hydrochloride, 219, 221  
Hydrazine in carbidopa, 425  
Hydrochloride, 19, 112, 115, 116, 117, 144, 183, 188, 211, 216, 331, 333, 388  
Hydrochlorothiazide, 120  
Hydrocodone, 492, 494  
Hydrocortisone, 64, 228, 229, 230, 472  
Hydrocortisone acetate, 228, 229, 281, 472  
Hydroflumethiazide, 57  
Hydrogen bonding, 318, 320  
Hydrogen peroxide solution, 21, 128  
Hydromorphone, 492, 494  
Hydrous wool, 24  
Hydrous wool fat (lanolin), 21, 24  
Hydroxide, 170  
Hydroxy urea, 24  
Hydroxyethyl theophylline, 114  
Hydroxymethyl cellulose, 19, 20  
Hydroxynaphthoate, 112  
Hyoscyamine sulphate, 281  
Hyperconjugation, 297
- I**
- Ibuprofen, 103, 278, 331, 474  
Ideal radioimmunoassay, 488  
Identification tests, 6, 10  
Ignition or volatalization, 173  
Imipramine, 116  
Imipramine HCl tablets, 312  
Immunization and antibody production, 498

- Immunoassay, 487  
Immunochemical techniques, 487  
Immunoglobulin (IgG), 487  
Impurity, 4  
In-plane bending vibrations, 317  
Indeterminate (random) errors, 72, 73  
Indian squill, 23  
Indicatorelectrode, 233, 240, 242  
Indigo-carmine solution, 35  
Indigocarmine, 35  
Indirect dimension, 349  
Indirect titration methods, 129  
Indomethacin, 103  
Indomethacin capsules, 312  
Inductive effects, 322  
Inert electrodes, 242, 243  
Infrared absorption, 13  
Infrared absorption spectra, 314  
Infrared region, 358  
Infrared spectroscopy, 315  
Infrared spectrum, 314  
Inorganic, 66  
Inorganic adsorbents, 413  
Inorganic solutes, 393  
Insolublessubstances, 28  
Instrumental errors, 8, 9, 72  
Insulin, 480, 481  
Integral spin, 343  
Interfacial tension, 402  
Interference due to bilirubin, 60  
Intergrator, 441  
Internal standard, 77, 448  
Internal standard flame photometer, 372, 373, 374  
Internal standard method, 442, 444, 445  
Interpretation of a NMR-spectrum, 350  
Interpretation of an IR-spectrum, 335  
Interpretation of thermogram, 195  
Inverse-detection, 349  
Iodimetric and iodometric titrations, 137  
Iodimetric Assays, 138  
Iodimetry, 137  
Iodine, 34  
Iodine, 38  
Iodine monobromide, 217  
Iodine monochloride method, 220  
Iodochlorhydroxyquin Tab., 188  
Iodochlorhydroxyquin cream/oiment, 332  
Iodometric assays, 138, 144  
Iodometry, 137, 138  
Ion-association complexes, 393  
Ion-exchange materials, 410  
Ion-exchange resins, 415  
Ion-pair formation, 399  
Ion-selective electrodes, 244  
Ionisation interferences, 385, 386  
Ionization detectors, 438, 439  
Iopanoic acid, 154  
Ipecacuanha, 23  
Iproniazid, 57  
IR-spectrophotometer, 75  
IR-spectroscopy, 334, 340, 425  
Iron (III) 'Cupferrate', 400  
Iron (III) oxinate, 403  
Iron dextran injection, 136  
Iron ore, 132  
Isocarboxazid, 11, 32, 57, 207, 209  
Isoniazid, 5, 214, 216  
Isoprenaline, 116  
Isoprenaline HCl injection, 312  
Isoprenaline sulphate, 26, 112  
Isoprenaline tablets, 312  
Isopropyl alcohol, 21  
Isopropylchloride, 276  
Isoxsuprine HCl, 312  
Isphagula husk, 13
- K**
- K-bands, 297, 298  
Karl Fischer method, 226  
Karl Fischer method for determination of water, 223  
Karl Fischer reagent, 223, 226  
Katharometer, 438  
KF-analysis, 225  
Kieselguhr, 414  
Kjeldahl's method, 73  
Koppeschaar's solution, 214
- L**
- L-propranolol, 504  
Labile natural products, 453  
Lactate dehydrogenase (LDH), 61  
Lactic Acid, 61, 104, 276  
Lanatoside-C, 312  
Large dead volume (LDV) union, 460  
Law of mass action and reversible reactions, 174  
Le Chatelier's principle, 68  
Leaching effect, 459  
Lead sulphate, 175  
Learning-curve syndrome, 9  
Lemon oil, 271, 279  
Leucine, 425

- Levodopa, 112, 278, 279  
Lewis's Theory, 97  
Liebermann's reaction, 58  
Ligand, 162  
Light absorption, 12  
Light kaolin, 18, 22  
Light-resistant containers, 5  
Lignocaine hydrochloride, 20, 24, 33, 116  
Limit test, 6  
Limit test for arsenate, 33  
Limit test for arsenic, 26  
Limit test for carbonate, 34  
Limit test for chlorides, 30  
Limit test for cyanide, 34  
Limit test for iron, 29  
Limit test for nitrate, 35  
Limit test for oxalate, 36  
Limit test for phosphate, 36  
Limit test for sulphates, 32  
Limit tests, 17  
Limit test's for acid radical impurities, 30  
Limit tests for lead, 25  
Limit tests for metallic impurities, 25  
Limit tests for non-metallic impurities, 37  
Limitations of emission spectroscopy, 360  
Limitations of Karl Fischer titration, 224  
Limiting specific volatile substance, 21  
Limits of insoluble matter, 17  
Limits of loss on ignition, 22  
Linalol, 422  
Limits of moisture, volatile matter and residual S, 19  
Limits of non-volatile matter, 21  
Limits of residue on ignition, 21  
Limits of soluble matter, 18  
Limits on ash value, 22  
Lincomycin hydrochloride, 331, 446  
Line spectra, 358, 359  
Liquid chromatography (LC), 452  
Liquid scintillation counter, 64  
Liquid-junction potential, 234  
Liquid-liquid extraction, 393, 394, 403  
Liquid-liquid partition chromatography, 432  
Liquid-solid adsorption chromatography, 432  
Liquorice, 23  
Lithium carbonate, 101  
Littrow type spectrograph, 367  
Lobelia, 23  
Lomustine, 251  
Loss on drying, 14  
Low dead volume (LDV) union, 460  
Lowest free energy, 401  
Lowry and Bronsted's Theory, 95  
Lux-flood concept, 98  
Lyman alpha line, 441  
Lymecycline, 20  
Lyophilized morphine-6-antiserum, 494
- M**
- $\mu$  Bondapack C18, 474  
 $\mu$  Bondapack C18 column, 473  
Macromolecules, 453  
Magnesium acetate, 35, 376  
Magnesium chloride, 167  
Magnesium oxalate, 175  
Magnesium silicate, 414  
Magnesium stearate, 101  
Magnesium sulphate, 19, 20, 22, 28, 30, 167  
Magnesium trisilicate, 22, 28, 167  
Magnesol, 414  
Mannitol, 33, 146  
Manufacturing standards, 5  
Masking and demasking agents, 166, 168  
Mass transfer, 433  
Mean, 77  
Mean deviation, 78  
Measurement of extinction (E), 307  
Mebendazole, 14, 114, 331  
Mecamylamine hydrochloride, 5  
Mechlorethamine, 144  
Meclizine hydrochloride, 116  
Medazepam, 24  
Median, 78  
Megestrol acetate, 312  
Melting point, 11  
Membrane indicator electrode, 240, 244  
Menadione, 136  
Menthone, 74  
Mephenesin, 217, 218  
Mephobarbital tablets, 183  
Meprobamate, 331, 332  
Mepyramine maleate, 112  
Mercaptopurine, 119  
Mercuric acetate, 112  
Mercuric sulphide, 175  
Mercury-mercury (I) sulphate electrode, 237  
Merits of Lowry-Bronsted theory, 96  
Mesomeric effect, 322  
Mestranol, 11  
Metal dithizonates, 404  
Metal halide prisms, 324  
Metal indicator electrode, 240, 242  
Metal-chelates, 393

- Metal-ion indicators, 161  
Metals interfering with normal reaction, 28  
Metformin hydrochloride, 114  
Methacholine chloride, 111  
Methadilazine hydrochloride, 58, 312  
Methadone, 116, 503  
Methadone hydrochloride, 14, 15  
Methandienone, 312  
Methdilazine hydrochloride, 331  
Methyldopa, 111  
Methocarbamol inj./tablets, 332  
Method of bisection, 238  
Method of circle fitting, 238  
Method of internal standards, 77  
Method of least squares, 77, 83  
Method of parallel tangents, 238  
Method of standard addition, 76, 375  
Methotrexate, 331, 474  
Methyl salicylate, 104, 320  
Methylaminophenol-sulphite solution, 37  
Methylamphetamine, 116  
Methyldopa, 57, 111  
Methylergometrine maleate, 312  
Methylparaben, 216  
Methylprednisolone, 228, 230  
Methyl salicylate (chelate), 320  
Methylprednisolone acetate, 228  
Metformin hydrochloride, 331  
Metronidazole, 11, 112  
Metronidazole benzoate, 113  
Microbial cleavage, 469  
Microbiological assays, 41  
Microprocessor based analytical equipments, 466  
Microprocessor control, 466  
Microvolume sampling valves, 459  
Microwave spectroscopy, 295  
Migration current, 256  
Milk of magnesia, 101  
Milliequivalent, 44  
Milton Roy Spectronic<sup>(R)</sup>-20, 304  
Minimising systematic errors, 75  
Mint oil, 279  
Modern KF-titrators, 225  
Mohr's salt, 131  
Molar absorptivity, 54, 295  
Molar refraction, 267  
Molar refractivity, 266, 267, 271  
Molarity, 44  
Mole fraction, 271  
Molecular diffusion, 433  
Molecular spectrum, 358  
Molecular weight, 480  
Molybdate-strychnine reagent, 290, 291  
Molybdovanadic reagent, 37  
Molybdovanadophosphoric acid complex, 36  
Monochromatic, 294  
Monochromatic beam, 294  
Monochromators, 324, 361  
Monodesethylflurazepam, 497  
Mordant black 2, 165  
Morphine, 486, 487, 492, 493  
Morphine hydrochloride, 12, 116  
Morphine in apomorphine hydrochloride, 425  
Morphine sulphate, 116  
Mossbauer spectroscopy, 295  
Mull technique, 329  
Multi GC-systems, 442  
Multichannel detector, 462  
Multiple dimensional TLC, 420  
Multiplicity of the signal, 351  
Multipurpose detector, 464, 465  
Multipurpose detectors, 462, 464, 465  
Murexide, 165
- N**
- N, N, Dimethylaniline, 447  
N, N-dimethylaniline in cephalixin, 447  
N-1-Desalkylflurazepam, 497  
N-1-Hydroxyethylflurazepam, 497  
N-Desmethylchloriazepoxide, 499  
N-Desmethyldiazepam, 499  
N-Phenylcarbazole, 448  
NaCl prism, 324  
Nalidixic acid, 5, 119, 331  
Nalidixic acid tablets, 312  
Nalorphine HCl, 312  
Nandrolone decanoate, 312, 331  
Nandrolone phenylpropionate, 5, 312, 331  
Naproxen, 281  
Ndirect titration methods, 129  
Near Infrared, 314  
Neo-cuproin, 403  
Neo-cuproin complex, 403  
Neobentine, 493  
Neomycin, 57, 287, 288  
Neostigmine bromide, 116  
Nephelometer, 75, 285, 286  
Nephelometric assay, 289  
Nephelometric analysis, 283  
Nephelometry, 284  
Nernst distribution Law, 394  
Nernst equation, 233, 234, 242, 244, 254

- Nernst glower, 324  
Nernst-type equation, 244  
Nessler cylinders, 25  
Nessler glasses, 25  
Neutralization, 200  
Neutralization reactions, 235  
Ni in prazosin hydrochloride, 387  
Nialamide, 57  
Nickel-chrome (nichrome), 195  
Nickel-dithizone-phenanthroline complex, 401  
Niclosamide, 120, 331  
Nicol prism, 274, 357  
Nicotinamide, 113  
Nicotinamide-adenine-dinucleotide hydrogenase (NAD), 61  
Nicotinic acid, 11, 26, 103  
Nicoumalone, 104  
Nicoumalone tablet, 312  
Nikethamide, 113  
Ninhydrin, 334, 467  
Ninhydrin reagent, 424  
NIST, 71  
Nitranilic acid, 186  
Nitranilic acid solution, 186  
Nitrate-sensing electrode, 248  
Nitrazepam, 250  
Nitrofurantoin, 312, 331  
Nitrofurazone, 5, 312, 331  
Nitrogen detector, 440  
NMR-spectrometer, 352  
NMR-spectroscopy, 348  
Non-Aqueous titrations, 106  
Non-equivalent responses, 480  
Non-radioactive antigen, 489  
Noradrenaline, 16  
Norethisterone, 331  
Normality, 44  
Noscapine, 12, 113  
Novobiocin, 57  
Nuclear magnetic resonance (NMR), 295  
Nuclear magnetic resonance (NMR) spectroscopy, 339  
Nuclear spin resonance (NSR) spectroscopy, 339  
Nucleic acids, 486  
Nucleosil C18 in acetonitrile, 474  
Null detector, 277, 374  
Number of replicates being Large, 86  
Number of replicates being small, 85  
Neutralization reactions, 42
- O**
- Octadecyl silane, 454  
Oestradiol benzoate, 12, 312  
Oestradiol dipropionate, 312  
Oestrogens in urine sample, 423  
Official standards, 5  
Olive oil, 355  
Open-column chromatography, 410  
Optical activity, 278  
Optical rotation, 278  
Oracet blue B, 110  
Orange oil, 279  
Orciprenaline sulphate, 21  
Ordinary Infrared, 314  
Organic adsorbents, 415  
Organochlorosilane, 454  
Orthophenanthroline, 134  
Out-of plane bending vibrations, 317  
Oxidation—reduction methods of analysis, 125  
Oxidation-reduction methods, 213  
Oxidation—reduction reactions, 43  
Oxidizing agents, 224  
Oxine, 179  
Oxprenolol, 388  
Oxprenolol hydrochloride, 116, 331, 388  
Oxprenolol tablets, 312  
Oxyphenbutazone, 14, 15, 103  
Oxyphenonium bromide, 157, 312
- P**
- p*-aminobenzoic acid, 308  
*p*-aminobenzoylglutamic acid, 308  
 $\pi$ -Bonds, 321  
 $\pi$ -Cloud interactions, 321  
Packard-Iri-card liquid scintillation spectrometer, 493  
Papaverine hydrochloride tablets, 182  
Paper and column chromatography, 410  
Para-aminosalicylic acid (PAS), 53  
Para-hydroxybenzoic acid, 334  
Paracetamol, 15, 88, 136  
Paraffin oil (nujol), 437  
Parallel control determination, 76  
Particle size of the stationary phase, 457  
Partition chromatography, 432  
Partition coefficient, 394, 396, 397, 399  
Partition effects, 432  
Partition law, 394  
Pascal's triangle, 346  
Pb in oxprenolol hydrochloride, 387  
Pd in carbenicillin sodium, 387  
Peak-width, 461  
Peanut oil, 355  
Penicillamine, 58  
Penicillin-G, 469

- Penicillins, 58, 353, 468  
Penicilloic acid, 142  
Pentaerythritol tetranitrate tablets, 310  
Pentane-2, 4-dione, 334  
Pentazocine hydrochloride, 331  
Pentazoline, 116  
Pentobarbital sodium tab., 182  
Pentobarbitone, 116  
Pentobarbitone sodium, 18, 26, 116  
Pentolamine hydrochloride, 331  
Peppermint oil, 74, 271  
Perchloric acid, 107  
Perkin-Elmer '3D' System, 462, 464  
Permanganate Methods, 126  
Permanganate, Dichromate and Cericsulphate Titration, 125  
Personal Errors, 8, 9, 17, 72  
Pethidine, 116  
Pb and Zn in copper sulphate, 387  
pH-meter, 75  
Pharmaceutical chemicals, 3  
Pharmaceutical Chemicals : Purity and Management, 3  
Phenacaine hydrochloride, 183  
Phenacetin, 331  
Phenelzine, 57  
Phenindamine tartrate, 113  
Phenindione, 146  
Pheniprazine, 57  
Phenobarbitone sodium, 17, 181  
Phenofornin hydrochloride, 114  
Phenol, 213, 218  
Phenoldisulphonic acid, 309  
Phenothiazines, 57, 58  
Phentolamine hydrochloride, 114, 188  
Phentolamine mesylate, 331  
Phenyl acetic acid, 469  
Phenylacetate, 469  
Phenylazopyridine hydrochloride, 57  
Phenylbutazone, 32, 103  
Phenylephrine HCl injection, 312  
Phenylephrine hydrochloride, 12, 116, 216  
Phenylhydrazine hydrochloride, 219, 221  
Phenytoin sodium, 18, 116, 182  
Pholcodine, 113  
Phosphorus detector, 440  
Phosphate inorganic, 66  
Phosphate standard solution, 37  
Phosphorescence, 463  
Phosphoric acid, 103  
Photoelectric cell, 277  
Photographic detector, 365, 366  
Photoionization detector (PID), 437, 439, 441  
Photometric method, 400  
Photomultiplier detectors, 365, 366  
Phthalate (for phthaly), 103  
Phthalylsulphathiazole, 33, 210  
Physical constants, 6, 11  
Physical impairment, 9  
Physostigmine injection, 114  
Pilocarpine hydrochloride, 35  
Piperazine adipate, 180  
Piperazine citrate, 113  
Piperazine citrate tabs., 188  
Piperazine hydrate, 26, 180  
Piperazine phosphate, 180  
Piperazine phosphate tabs., 180  
Pipettes, 46  
Planck's constant, 300, 342, 343  
Plane of polarized light, 277  
Plane-polarized beam, 275  
Plane-polarized light, 274, 277  
Plasma protein solution, 480, 481  
Plate theory, 432, 433  
Platinum-Rhodium, 195  
pM indicators, 164, 165  
Podophyllum resin, 24  
Poisoning of electrodes, 202  
Polarimeter, 75, 277, 278  
Polarizing prism (Nicol), 277  
Polarography, 425, 497  
Polyacrylamide, 476  
Polyamide, 415  
Polychromatic or heterochromatic, 294  
Polyethylene glycol (1500), 13  
Polyethylene glycol (4000), 13  
Polyethylene glycol (6000), 13  
Polyethylene powder, 415  
Polyglycols (carbowaxes), 437  
Polymer (liquid) membrane electrodes, 244, 245  
Polymeric association, 321  
Polypeptide, 487  
Polysaccharide, 487  
Polysorbate-20, 13  
Polysorbate-80, 13  
Polyvalent metal ions, 162  
Polyvinyl pyrrolidone, 144  
Porous-layer beads, 461  
Porous-silica particles, 461  
Post-Column derivatisation, 454  
Post-column on-line derivatization, 466, 467  
Potassium acetate, 35  
Potassium alum,  $KAl(SO_4)_2 \cdot 12H_2O$ , 169, 179  
Potassium bromide, 28, 128

- Potassium bromide disc technique, 329  
Potassium chloride, 28, 30, 153  
Potassium citrate, 33, 36, 113, 376  
Potassium hydrogen phthalate, 76, 109  
Potassium iodide, 35, 229, 220, 221  
Potassium thiocyanate solution, 406  
Potentiometric measurements, 235  
Potentiometric method, 251  
Potentiometric titration, 237, 239, 256  
Potentiometric titration in non-aqueous solvents, 235, 237  
Potentiometric titrations, 113, 234, 235, 237, 239, 256  
Potentiometric titrations in non-aqueous solvents, 235, 237  
Pouring of layers, 411  
Powdered Belladonna Herb, 23  
Powdered caraway, 23  
Pre-coated plates, 413  
Pre-column off-line derivatization, 466  
Precessional frequency, 343  
Precipitation, 200  
Precipitation from solution, 173  
Precipitation reactions, 235, 236, 256, 257  
Precision, 74  
Prednisolone, 228, 229, 230, 472  
Prednisolone sodium phosphate, 226  
Prednisone, 230, 472  
Prednisone acetate, 12  
Preparation of 0.05 M disodium ethylenediamine tet, 166  
Preparation of 0.05 M potassium iodate, 219  
Preparation of 0.1 iodine solution, 138  
Preparation of 0.1 M sodium nitrite solution, 208  
Preparation of 0.1 N ammonium ceric sulphate solution, 134  
Preparation of 0.1 N ammonium thiocyanate solution, 155  
Preparation of 0.1 N bromine solution, 215  
Preparation of 0.1 N lithium methoxide, 117  
Preparation of 0.1 N perchloric acid, 108  
Preparation of 0.1 N potassium bromate, 217  
Preparation of 0.1 N potassium dichromate solution, 131  
Preparation of 0.1 N potassium methoxide in toluen, 117  
Preparation of 0.1 N potassium permanganate solution, 127  
Preparation of 0.1 N silver nitrate solution, 153  
Preparation of 0.1 N sodiu methoxide, 117  
Preparation of 0.1 N tetrabutylammonium hydroxide, 119  
Preparation of standard solution of Mohr's salt, 131  
Preparation of standard solutions, 50  
Preparation of starch solution, 140  
Preparative TLC, 420  
Preset equivalence point potentiometer, 249  
Primaquine phosphate, 207, 211  
Primary metal dithizonates, 404  
Primary standard, 44  
Primidone, 331  
Principle of FID, 439  
Principle of solubility product, 175  
Prism, 366  
Prism monochromators, 364  
Procainamide, 211  
Procainamide hydrochloride, 5, 207, 211, 261  
Procaine hydrochloride, 207, 211  
Procaine penicillin, 20  
Prochlorperazine maleate, 113  
Prochlorperazine mesylate, 113, 331  
Profile of bilirubin levels, 57  
Profile of cholesterol levels, 58  
Profile of LDH-levels, 62  
Progesterone in plasma, 423  
Progesterone suspension sterile, 183  
progesterone tablets, 183  
Proguanil hydrochloride, 114, 187, 331  
Promethazine hydrochloride, 57, 116  
Promethazine teoclate, 58  
Promethazine theoclate, 32, 113  
Proof of identity, 335  
Propagation of light, 274  
Propantheline bromide, 114  
Proportional errors, 72  
Propoxyphene hydrochloride, 116  
Propranolol hydrochloride, 116, 503  
Propranolol-Hemisuccinate-Bovine-Serum-Albumin (BSA), 503  
Prostaglandins, 486  
Protection against oxidation, 419  
Protein, 487  
Protein polysaccharide, 486  
Proteins, 486  
Protogenic solvents, 107  
Protolysis, 96  
Protolytic reaction, 96  
Proton acceptor, 107  
Proton donor, 107  
Proton magnetic resonance (PMR) spectroscopy, 347  
Protonated amines, 400  
Protophillic solvents, 107  
Proxyphylline, 19  
Pseudo peaks, 459  
Psoralen, 312  
Pulsating current, 381  
Purification of silica gel-G Layers, 417  
Purified talc, 18, 34  
Purity, 4  
Pyrazinamide, 331  
Pyridine, 108

Pyridoxine hydrochloride, 116  
Pyrimethamine, 113, 331  
Pyruvic acid, 61

## Q

Qualitative evaluation, 424  
Quantitative analysis, 424  
Quantitative determinations, 17  
Quick recovery of separated constituents, 410  
Quillaia, 23  
Quinalidine red, 110  
Quinethazone tablets, 180, 332  
Quinidine in mixtures and hydroquinidine, 353  
Quinidine sulphate, 19, 113  
Quinine bisulphate, 113  
Quinine dihydrochloride, 33  
Quiniodochlor tablets, 180  
Quinoline, 146

## R

R-bands, 297, 298  
Racemic camphor, 279  
Radioactive and non-radioactive antigens, 492  
Radioactive counters, 491  
Radioimmunoassay (RIA), 41, 53, 63, 485, 486, 488, 491, 500  
Radioimmunochemical methods, 487  
Radiometry, 425  
Random walk and nonequilibrium theory, 432, 433  
Rate theory, 432, 433  
Reagent errors, 72  
Reagents for derivatization, 467  
Reciprocating pump, 457, 458  
Rectilinearity, 288  
Redox reactions, 200, 235, 236  
Reducing agents, 224  
Reference cell, 438  
Reference electrodes, 233, 240, 247  
Reflectance spectroscopy, 425  
Reflector, 286  
Refractive index, 11, 265, 266, 270, 465  
Refractive index detector, 464  
Refractivity, 266, 271  
Refractometer, 75, 464  
Refractometry, 265, 271  
Related substances in official drugs, 448  
Related substances present in official drugs, 427  
Related substances present in pharmacopoeial drugs, 427  
Relative peak area, 351  
Relative potency, 57

Residual method of iodimetry, 138  
Residual titration, 42  
Residual titration methods (RTM), 98, 100, 101, 103, 130, 142, 166, 169  
Resonance, 319, 322  
Retention, 434  
Rhubarb, 23  
RI-Detector, 464  
Riboflavine phosphate, 312  
Rifampicin, 331  
Rifamycin sodium, 226  
Rocking, 317  
Rotating platinum microelectrode, 258  
Rotational energy, 298  
Rowland mounting, 367  
Rule, 86  
Rules Based on the average deviation, 86  
Rules Based on the range, 86

## S

Saccharin, 24  
Saccharin sodium, 113  
Sadtlar standard spectra, 13  
Salbutamol sulphate, 5, 37, 38, 113  
Salicylaldehyde oxime, 256  
Salicylaldoxime, 256  
Salicylate, 211  
Salicylic acid, 15, 30, 103, 216  
Salient features of indeterminate errors, 74  
Salient features of radioimmunoassays, 64  
Sample, 7  
Sample cell, 438  
Sample handling, 361  
Sample injection system, 436, 459  
Sampling plan, 87  
Sampling procedures and errors, 6  
Sampling statistics, 87  
Saturated calomel electrode (SCE), 236, 240, 241  
Saturation of the signal, 344  
Scaler, 349  
Schiff's base, 55  
Scintillation counters, 491  
Scissoring or symmetrical bending, 317  
Scopolamine hydrobromide, 114  
Secobarbital sodium, 182  
Second derivative curve, 239  
Second order electrodes, 242, 243  
Secondary metal dithizonates, 404  
Secondary pharmaceutical product, 3  
Secondary standard, 44  
Sedative and hypnotic drugs, 499



- Selenium, 39  
Selenium sulphide, 39  
Selenous acid, 39  
Self-electrodes, 363  
Semicarbazide hydrochloride, 219  
Senega root, 23  
Senna leaf, 23  
Sensitivity, 17, 385  
Separation effects, 411  
Sephadex, 476, 478, 479  
Sephadex-15, 477  
Sephadex-200, 477  
Sephadex-75, 477  
Sephadex-LX, 477  
Septum injectors, 459  
Serum analysis, 41  
Serum-glutamic-oxaloacetic-transaminase (SGOT), 53, 66  
Servomechanism, 466  
Shark liver oil, 11, 12  
Sigmoid-curve, 238  
Significant errors, 77  
Significant figures, 80  
Silica gel, 414  
Silica gel FC, 479  
Silicon carbide 'Globar', 324  
Silicone defoaming agent, 402  
Silicone oil, 437  
Siloxanes, 453  
Silver chloride, 175  
Silver electrode, 237  
Silver nitrate, 410  
Silver thiocyanate, 175  
Silver-silver chloride electrode, 236, 240, 242  
Simethicone tablets/suspension, 333  
Simple flame photometer, 372  
Single—pan electric balance, 75  
Single-beam atomic absorption spectrophotometer, 380  
Single-beam spectrophotometer, 303  
Single-monochromator infrared spectrophotometer, 323, 325  
Size exclusion chromatography, 409, 476, 479, 480  
Snell's law, 265  
Sodium, 17, 166, 154, 137, 211, 214  
Sodium (for sulphur), 180  
Sodium acetate, 113  
sodium acetylsalicylate, 104  
Sodium acid citrate, 36  
Sodium amino salicylate, 211  
Sodium ascorbate, 142  
Sodium aurothiomalate, 180  
Sodium benzoate, 113  
Sodium bicarbonate, 30, 33, 34, 100  
Sodium carbonate, 99  
Sodium chloride, 19, 37, 157, 177  
Sodium citrate, 36, 114  
Sodium cromoglycate, 36, 312  
Sodium hydroxide, 33, 99  
Sodium iodobismuthate solution, 426  
Sodium lactate injection, 101  
Sodium lauryl sulphate, 183  
Sodium metabisulphite, 143  
Sodium methyl hydroxybenzoate, 226  
Sodium oxalate, 76  
Sodium phosphate, 30  
Sodium salicylate, 219  
Sodium salicylate tablets, 100  
Sodium salt of ethosuximide, 118  
Sodium sulphate, 19, 20  
Sodium tetrathionate, 137, 139, 214  
Sodium thiosulphate, 137, 142, 214  
Solochrome black T, 165  
Solute-property detectors, 461  
Solvent effects, 301  
Solvent extraction, 173, 397, 403  
Sorbitan monooleate, 183  
Spark chamber method, 425  
Spearmint oil, 279  
Special techniques in TLC, 419  
Specific optical rotation, 12, 278, 279, 280  
Specific organic compounds present in pharmaceutical substances, 426  
Specific refraction, 266, 267  
Specific rotation, 278  
Specific surface area, 13  
Specific tests, 15  
Specificity of the tests, 17  
Spectral interferences, 385  
Spectrochemical analysis, 293  
Spectrofluorometry (SPF), 486, 497  
Spectrographs, 361, 366  
Spectrophotometry, 76, 295, 425  
Spectroscopic-grade solvent, 306  
Spectroscopy, 293  
Spherisorb CDS 1, 474  
Spin quantum number, 342  
Spin quantum values, 342  
Spin-spin coupling, 349  
Spin-spin interactions, 345  
Spironolactone, 312, 331  
Spotting of the components, 418  
Spray-dried acacia, 24  
Spraying, 411

- Spread-layer chromatography, 410  
Spreader, 412  
Squill, 23  
Stability, 4  
Stability of complexes, 163  
Stabilizing an emulsion, 401  
Standardization of 0.1 N ammonium ceric sulphate solution, 134  
Standard addition method, 384  
Standard calibrations, 49  
Standard curve, 54, 63  
Standard deviation, 78, 79  
Standard hydrogen electrode, 240  
Standard hydrogen electrode (SHE), 240, 241  
Standard molybdenum solution, 405  
Standard solution, 44  
Standardization, 44  
Standardization of 0.05 M disodium edetate solution, 166  
Standardization of 0.1 iodine solution by the aid, 139  
Standardization of 0.1 Iodine solution with the aid, 139  
Standardization of 0.1 M sodium nitrite solution, 208  
Standardization of 0.1 N ammonium thiocyanate solution, 155  
Standardization of 0.1 N bromine with 0.1 N sodium, 215  
Standardization of 0.1 N  $K_2Cr_2O_7$  solution, 131  
Standardization of 0.1 N methoxide solution, 117  
Standardization of 0.1 N perchloric acid, 109  
Standardization of 0.1 N potassium bromate solution, 217  
Standardization of 0.1 N potassium dichromate solution, 131  
Standardization of 0.1 N potassium permanganate solution, 127  
Standardization of 0.1 N silver nitrate solution, 153  
Standardization of 0.1 N tetrabutylammonium hydrox, 119  
Standards of Purity, 4  
Starch, 30  
Static (or Isothermal) thermogravimetric analysis, 194  
Static thermogravimetric analysis, 194  
Statistical treatment of finite samples, 77  
Statistical validation, 71, 77  
Sterculia, 23  
Stereospecificity, 502, 503  
Steric hindrance, 298  
Steroidal hormones, 486  
Steroids, 353  
Stilboesterol diphosphate, 312, 331  
Stilbonesterol, 310  
Stilbesterol, 311  
Stoichiometric point, 42  
Stop-flow septumless injection, 459  
Stramonium leaf, 23  
Stream-splitter, 436  
Streptomycin, 287, 288, 468  
Streptomycin sulphate, 19  
Stretching, 316  
Stretching and bending vibrations, 316  
Stretching frequency, 315  
Stretching vibrations, 316  
Strip chart recorder, 465  
Strip-chromatography, 410  
Strychnine, 291  
Strychnine-molybdophosphate complex (I), 290  
Student's t-Test, 81, 82  
Styrene-divinylbenzene copolymers, 461  
Substances assayed after conversion, 181  
Substances assayed after conversion to derivatives, 184  
Substances assayed after conversion to free acid, 181  
Substances assayed after conversion to Free base, 182  
Substances assayed after conversion to free compound, 183  
Substances reacting vigorously with HCl, 28  
Substrate present in large excess, 58  
Succinyl sulphathiazole, 207, 211  
Succinylcholine chloride, 116  
Succinylsulpha, 211  
Sucrose, 281, 415  
Sulindac, 502, 503  
Sulindac-Bovine-Serum-Albumin (BSA), 503  
Sulindac sulphide, 502, 503  
Sulindac sulphone, 502, 503  
Sulphacetamide sodium, 211  
Sulphadiazine, 55, 211  
Sulphadimethoxine, 211, 331  
Sulphadimidine sodium, 211  
Sulphadrugs, 60, 207  
Sulphalene, 211, 331  
Sulphamethizole, 211, 331  
Sulphamethoxazole, 207, 211  
Sulphanilamide, 208  
Sulphaphenazole, 207, 211  
Sulphate, 112  
Sulphated ash, 14, 22, 24  
Sulphathiazole, 210  
Sulphobromophthalein sodium, 180  
Sulphomolybdic solution, 37  
Sulphonamides, 353  
Sulphur detector, 440  
Sulphuric acid, 35  
Sumatra benzoin, 23  
Sunflower seed oil, 355  
Supercon magnets, 349  
Supporting electrolyte, 257  
Surface chromatography, 410  
Swelling power, 13

Symmetrical stretching, 316  
Synergism, 400  
Synergistic extraction, 407

## T

Tablets, 180, 182, 216, 312, 332  
Tabs, 180, 188  
Tailing, 453  
Tartaric acid, 36, 102  
Tartrate, 113  
Tatistical treatment of finite samples, 77  
Technique of quantitative analysis, 41  
Technique of volumetric analysis, 52  
Temazepam, 19  
Terpene alcohols, 422  
Terpin hydrate, 422  
Testosterone, 19, 281  
Testosterone in urine sample, 423  
Testosterone propionate, 312, 331  
Tetrabutylammonium hydroxide, 119, 250  
Tetracyclines, 10, 57, 60, 468  
Tetramethylammonium hydroxide, 229  
Tetramisole hydrochloride, 117  
Tetranitrate tablets, 310  
Tetrathionate, 137, 214  
Tetrazolium assay of steroids, 228  
TGA, 193, 194  
The effect of an external magnetic field, 340  
The energy transitions, 341  
The length of the column, 457  
The precessional frequency, 341  
The precessional motion, 340  
The spinning nucleus, 340  
Theobromine, 471  
Theoclate, 113  
Theophylline, 157, 471, 472  
Theophylline hydrate, 19, 20  
Theory and technique of quantitative analysis, 41  
Theory of acidimetry, 98  
Theory of alkalimetry, 101  
Thermal compartment, 437  
Thermal conductivity detector (TCD), 437, 438  
Thermal shock, 402  
Thermionic detector (NP-FID), 437, 439, 440  
Thermister-sensing-element, 201  
Thermoanalytical analysis, 193  
Thermoanalytical methods, 193  
Thermocouples, 198, 324  
Thermograms, 193, 195  
Thermogravimetric analysis, 193, 194  
Thermogravimetric evaluation, 195, 196  
Thermometric titrations (TT), 193, 200, 201, 203  
Thermopiles, 324  
Thiabendazole, 117, 331  
Thiamine hydrochloride, 185  
Thiamine silicotungstate, 186  
Thiazide diuretics, 57  
Thiazole, 211  
Thin-layer chromatography (TLC), 6, 10, 409, 485, 486  
Thiocarbazone, 180  
Thiocyanate method, 403, 405  
Thiosemicarbazide, 56  
Thiosulphate, 137, 214  
Thymol, 215  
Thyroid, 145  
Thyroid gland dried, 146  
Thyroxine sodium, 5  
Tin (II) chloride solution, 406  
Titer level, 487  
Titrability of polyvalent metal ions employing, 164  
Titration error, 239  
Titration of halogen acid salts of bases, 115  
Titration of primary, secondary and tertiary amine, 111  
Titrations with 0.1 N bromine, 214  
Titrations with potassium bromate, 217  
Titrations with potassium iodate, 219  
TLC with wedged-tip divisions, 421  
TLC-normal technique, 421  
TLC-wedged-tip technique, 421  
Tobramycin, 288  
Tobramycin, 287, 288  
Tocopherol acetate, 136  
Trace analysis, 411  
Trans-diethylstilboesterol, 311  
Transational energy, 298  
Transfer pipettes, 46, 48  
Transmittance, 55  
Tranlycypromine, 57  
Tri-calcium phosphate, 414  
Triamcinolone acetamide, 19, 226, 228, 312  
Triamterene, 114  
Trimethoprim, 114  
Tribasic calcium phosphate, 29  
Trichloroethylene, 21  
Triclofos sodium, 37  
Trifluoperazine hydrochloride, 331  
Triflupromazine hydrochloride, 331  
Trimeprazine tartrate, 58  
Trimethoprim, 114  
Triphenylformazan, 229  
Triphenyltetrazolium chloride, 228  
Triprolidine hydrochloride, 333

Tritiated flunisolide, 502  
Tritium NMR spectroscopy, 347  
Tropicamide, 19  
True value, 74  
Tubocurarine chloride, 312  
Turbidance (S), 284  
Turbidimeter, 75  
Turbidimetric analysis, 283  
Turbidimetry, 76, 284  
Twin-head reciprocating pump, 458  
Twin-polarized microelectrodes, 260  
Twisting, 317  
Two dimensional correlation spectroscopy, 347  
Two dimensional COSY spectrum, 347  
Two-dimensional chromatography, 420  
Two-dimensional planar chromatography, 420  
Tyndall effect, 283  
Types of packing, 461  
Typical liquid phases, 437  
Typical RIA-Standard Curves, 490

## U

Ultraviolet region, 358  
Undecylenic acid, 11  
Universal gas chromatographic detector, 439  
Unknown bulk material, 88  
Unpolarized light, 274  
Urea (BUN), 56  
Urea (Nitrogen), 66  
Urine analysis, 41  
Usage of pM indicators in complexometric titration, 164  
Usanovich Theory, 97  
UV-detector, 462, 471  
UV-function, 464  
UV-spectrophotometer, 75  
UV-spectrophotometry, 425  
UV-VIS, IR-spectroscopy, 295  
UV/Visible absorption, 465

## V

Valerian, 23  
Vapour-phase chromatography, 423, 425  
Variable thickness of think layers, 411  
Variance, 78  
Variance-ratio test, 81, 82  
Verapamil hydrochloride, 117  
Vibrational coupling, 318  
Vibrational energy, 299  
Vibrational frequencies, 317, 318

Vibrations, 317  
Vinblastine sulphate, 19, 474  
Viral antigens, 486  
Viscosity, 13  
Viscosity of the mobile-phase, 457  
Visible region, 358  
Visualization, 419  
Vitamins, 486  
Volatile oil, 270  
Volhard's Method, 152, 156  
Volumetric analysis, 41, 42  
Volumetric apparatus, 44  
Volumetric apparatus meant to contain a definite V, 49  
Volumetric apparatus meant to deliver a definite V, 44  
Volumetric flasks, 49

## W

Wagging, 317  
Wandering-of-the-arc source, 363  
Water present in mentrophin, 449  
Water-soluble ash, 22, 25  
Wedge-tip chromatography, 421  
Weight per millilitre, 12  
Wide choice of stationary phase, 410  
Wijs method, 355  
Wool alcohols, 24  
Wool Fat, 24

## X

X-Ray absorption spectroscopy, 295  
X-Ray fluorescence spectroscopy (XRF), 295  
Xenon-radiation, 463  
Xylenol orange, 169

## Z

Zero dead volume (ZDV) union, 460  
Zero-spin, 343  
Zinc carbonate, 414  
Zinc chloride, 168  
Zinc oxide, 19, 30, 100  
Zinc stearate, 168  
Zinc sulphate, 30, 168  
Zinc undecenoate, 19  
Zinc undecylenate, 168  
Zn in glucogen, 387  
Zn in insulin, 387  
Zn in sodium sulphite heptahydrate, 387  
Zorbax C8, 474