M.Sc.
Sem-I to IV(Chemistry)

संत गाडगे बाबा अमरावती विद्यापीठ

SANT GADGE BABA AMRAVATI UNIVERSITY

विज्ञान विद्याशाखा
(FACULTY OF SCIENCE)

अभ्यासक्रमिका
विज्ञान पारंगत परिक्षा (रसायनशास्त्र)
सत्र-१ ते सत्र -४

PROSPECTUS
OF
MASTER OF SCIENCE EXAMINATION
IN
CHEMISTRY
Semester -I & III, Winter 2014,
Semester -II & IV, Summer 2015,

2014
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Price Rs.   /-

9. Methods of testing for petroleum and petroleum products. IS 1448-1960 Part I to Part IV. Published by ISI New Delhi 1967
10. IP Stands for Petroleum and products Published Applied Service Publisher Ltd. London, 33rd Edition 1974.
11. American Stds. For testing Materials, New York 1967.
12. Textbook of Inorganic Chemistry by A. I. Vogel.
13. Instrumental Methods of Analysis by Willard, Merit and Dean
14. Industrial Chemicals, Faith et. al. Wiley Interscience New York
15. Textbook Of Practical Organic Chemistry by I. C. Voley.
16. Industrial Organic Chemistry by J. K. Stille
17. Unit Operations by Kale
18. Reagents for Organic Synthesis Fisher and Fisher.
19. Technique of Organic Chemistry Vol I, Part I- IV A. Weishberger.

Semester IV
Analytical Chemistry Practicals (Special)

Total Hours: 90 hrs. (9 Hours per week)   Marks: 100

1) Solvent extraction of Al/Mg or Mg/UO$_2$ using 8-hydroxy quinoline complex and determination by spectrophotometry.
2) Separation and estimation of copper and cobalt on cellulose Column.
3) Analysis of pyrolosite with respect to I) iron II) Manganese
4) Assay of sulpha drugs
5) Analysis of vit. C in juice and squashs
6) Determination of sap value and iodine value of oil.
7) Determination of p-nitrophenol by colorimetry.
8) Determination of iron in syndets by colorimetric method.
9) Determination of Phenol by Conductometry.
10) Potentiometric determination of thiourea.
11) Estimation of calcium/sodium in the sample of dairy whitener by flame photometry.
12) Analysis of pigments with respect to Zn and Cr.
13) To determine the amout of each copper and bismuth or copper and iron (III) from the given mixture at 745 nm by spectrophotometric titration using solution of
14) EDTA Identification of sulpha drug in tablets and ointments by TLC.
15) Fertilizer analysis for N, P, K
16) Analysis of iodized table salt for its iodine content.
17) Estimation of the purity of given azo dye colorometrically.
18) Chemical analysis of chilly and turmeric powder.
19) Simultaneous estimation of Cl and I by potentiometric method.

20) Colorimetric determination of simple ions (phosphate, sulphate, nitrate/nitrite, toxic heavy metals).
21) Analysis of soap and detergent.
22) Determination of alcohol from beverages spectrophotometrically using dichromate.
23) Determination of amount of Zinc from the given sample solution by Nephelometric/Turbidimetric titration using standard solution of Ba (NO3)2 or
24) Pb (NO3) Analysis of Pharmaceutical mixtures
25) Simultanious determination of Vitamic C and Vitamin E
26) Analysis of some common pesticides insecticides, plastics and detergents
27) To determine the amount of each para nitro-phenol and meta nitro-phenol from the given mixture by spectrophotometric titration using standard solution of NaOH (max-280 nm)
28) Estimation of sodium benzoate/sodium metabisulphite. boric acid and salicylic acid in food
29) Analysis of chrome steel alloy for chromium and nickel content
30) Agricultural analysis of soil sample, animal feeds, soil micronutrients, milk powder for Ca, Fe and P content.
31) Any other relevant expt. may be added

The Practical examination will be based on the syllabus of Analytical Chemistry (Special Papers).

Time: 6-8 hours (one day examination)   Marks: 100

I) Exercise -1	- 40 Marks
II) Exercise-2	- 40 Marks
III) Record	- 10 Marks
IV) Viva- Voce	- 10 Marks
Total	-100 Marks

M.Sc. (Chemistry)
Semester-IV
Practical-VIII - Project Work

Time : 9 Hrs. Per Week   Marks : 100

The Students will develop utilities such as analytical spectra, simulation programmes that will suppliment laboratory exercises in their subject of specialization. For this, variety of small research project designed by the teacher based on the interest of the student and capabilities should be worked out.

The project will be evaluated by external and internal examiners.

Study Tour: Educational / Industrial tour is compulsory for M.Sc. Chemistry.

(i) Semesters I / II : Visit to local industry.
(ii) Semester III / IV : Education tour to visit the industry / Research Laboratory.

List of equipments/appratus required for the M.Sc. Chemistry Semester-I to IV Practicals.

1. Conductivity meter	03 nos./batch
2. pH meter	03 nos./batch
3. Potentiometer	03nos./batch
4. Polariometer	02 nos./batch
5. Centrifuge machine	02 nos./batch
6. Vaccum Pump	01 no./batch
7. Hot air oven	01 no./batch
8. Blower hot & cold	03 nos./batch
9. Stop watch	10 nos./batch
10. Weight box con. 100 gm.	10 nos./batch
11. Analytical double pan balance	10 nos./batch
12. One pan electrical balance	10 nos./batch
13. Tripple beam balance	02 nos./batch
14. Melting point apparatus	02 nos./batch
15. Spectro photometer	02 nos./batch
16. Water still 01 no./lab	
17. Colorimeter	02 nos./batch
18. Thermostate	01 no./batch
19. Electrodes platinum	03 nos./batch
Silver 03 nos./batch	
Glass 03 nos./batch	
Reference 03 nos./batch	
20. Heating mentle	02 nos./batch
21. Glass double distillation unit	01 no./lab
22. Flamed Photometer	01 no./batch
23. LCR meter 01 no./lab	
24. Polarpgraph with recorder	01 no./lab
25. U.V.visible spectrophotometer	1 no./lab
26. Standard cell	02 nos./batch
27. Muffle furnace	01 no./lab
28. D.C.Voltmeter	01 no./lab
29. Infrared lamp	05 nos./lab

30. Refrigerator	01 no./lab
31. Magnetic stirrer 2 ml, 5 ml.	02 nos./batch
32. Dimmer state	01 no./lab
33. Abbes refractometer	01 no./batch
34. Sodium lamp for polarimeter	02 nos./batch
35. T.L.C. Kit	01 no./lab
36. Calorimeter	01 no./lab
37. Bomb Calorimeter	02 nos./batch
38. BOD analyser	01 no./lab
39. Water analysis kit	01 no./lab
40. Computer-386/486	01 no./lab
41. U.V.Lamp 02 no./lab	
42. Ice making machine	01 no./lab
43. LCR bridge	01 no./lab
44. HPLC	01 no./lab
45. Deioniser	01 no./lab
46. Ion exchange columnos	04 no./lab
47. Turbidity meter	01 no./lab
48. Optical densitometer	01 no./lab
49. Orsat apparatus (gas analysis)	01 no./lab
50. Interferometer (ultrasound)	01 no./batch
51. Youyos balance	01 no./lab
52. Hydraulic press	01 no./lab
53. Shaking machine	01 no./lab
54. GM.Counter	01 no./lab
55. Electrophorasis apparatus	01 no./lab
56. Karl-Fisher Titration apparatus	01 no./lab
57. Power supply (regulator)	01 no./batch
58. Regulated furnace	01 no./lab
59. Thermocouple	01 no./lab
60. Vaccum oven	01 no./lab
61. Top pan balance	01 no./lab
etc..,	

List of glasswares (main) for M.Sc. Chemistry Semester-I to IV Practicals

1. Soxhlet set	02 nos./batch
2. Kjeldahlos apparatus set (for Nitrogen element estimation)	02 nos./batch
3. Distillation unit	04 nos./batch
4. Separating funnel	10 no./batch

M.Sc. Computer Science   Prospectus No. 20131216

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(संगणकशास्त्र)

PROSPECTUS
OF
**MASTER OF SCIENCE IN
COMPUTER SCIENCE**
Semester -I , Winter 2012
Semester-II, Summer-2013
Semester -III , Winter 2013
Semester-IV, Summer-2014

2012

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Books:

1. Gonzalez, R. C. and Woods, R. E. : Digital Image Processing, 2nd/3rd ed., Prentice Hall

2. Sonka, M., Hlavac, V., Boyle, R. : Image Processing, Analysis and Machine Vision (2nd edition), PWS Publishing, or (3rd edition) Thompson Engineering

3. Anil K. Jain : Fundamentals of digital image processing (2nd Edition), Prentice-Hall, NJ

4. Willian K. Pratt : Digital Image Processing (3rd Edition), John Wiley & Sons

4MCS4(3) : Software Testing

Unit-I : **Testing:** Introduction and Outline - Introduction to testing and test outline, sample application, incremental testing approach, outline approach steps, evaluation and schedule estimation.

Unit-II : Introduction to test outline to test cases, creating test cases, documentation short cuts, introduction to using tables and spreadsheets, sample application, Documenting test cases.

Unit-III : Other types of tablets, State machines, test case table with multiple inputs, decision tables, applications with complex data, managing tests, testing object-oriented software, comparison, System testing example, Unit testing of Classes.

Unit-IV : **Testing Web Applications:** Introduction, sample application, functional and usability issues, configuration and compatibility testing, reliability and availability, security testing, database testing, post implementation testing.

Unit-V : **Reducing the No. of test cases:** Introduction, prioritization guidelines, priority category scheme, Risk analysis, interviewing to identify problem areas, combination schemes, tracking selected test cases.

Unit-VI : **Creating Quality Software:** Introduction, development environmental infrastructure, software testing environment, software testing tools, applying software standards to test documentation.

Books:

1. Introducing Software Testing: Louise Tamres (PE)

2. Software Testing in the Real World by Kit – Pearson

4MCS5: Lab VII - - Based on 4MCS1 and 4MCS2

"Distribution of marks for Computer Lab-VII"

A) Each student shall perform two practicals.

B) Question slip for each examinee shall be attached to the answer book.

C) Marks should be given on the basis of following criteria:

I)	Practical-I	: 30 marks
II)	Practical-II	: 30 marks
III)	Viva-Voce (Each practical 15 marks)	: 30 marks
IV)	Record	: 10 marks
	Total	**: 100 marks**

4MCS6 : Project

The subject of the project will be given to the student independently on any current topic belonging to the subject. The topic should be assigned at the beginning of the semester. The examinee shall be required to produce two typed hard-bound and one soft copy (C.D.) copies of project report signed by teacher in-charge and certified by head of the department as bonafide work of him/her.

Distribution of Marks:

1.	Project Submission	:	40 marks
2.	Project Presentation	:	40 marks
3.	Viva	:	20 marks
	Total	**:**	**100 marks**

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