

Kurukshetra University Kurukshetra
Scheme and Syllabi
for B.Sc. Part-I, Part-II and Part-III (Chemistry) w.e.f. 2014-2015, 2015-2016
and 2016-2017

B.Sc. Part-I (Ist Semester)

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.#.	Time
I	CH-101	Inorganic Chemistry (Th)*	32 + 8	3 hrs.
II	CH-102	Inorganic Chemistry (Th)	32 + 8	3 hrs.
III	CH-103	Organic Chemistry (Th)	32 + 8	3 hrs.

*Th means Theory, # I.A. means Internal Assessment.

B.Sc. Part-I (IInd Semester)

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.	Time
IV	CH-104	Inorganic Chemistry (Th)	32 + 8	3 hrs.
V	CH-105	Physical Chemistry (Th)	32 + 8	3 hrs.
VI	CH-106	Organic Chemistry (Th)	32 + 8	3 hrs.
VII	CH-107	Practicals	60 (No Internal Assessment in Practical Exam)	7 hrs.

Note: Practical Exam will be held at the end of 2nd Semester

Total Marks of I & II Semesters = 120 + 120 + 60 = 300

B.Sc. Part-II (IIIrd Semester)

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.	Time
VIII	CH-201	Inorganic Chemistry (Th)	32 + 8	3 hrs.
IX	CH-202	Physical Chemistry (Th)	32 + 8	3 hrs.
X	CH-203	Organic Chemistry (Th)	32 + 8	3 hrs.

B.Sc. Part-II (IVth Semester)

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.	Time
XI	CH-204	Inorganic Chemistry (Th)	32 + 8	3 hrs.
XII	CH-205	Physical Chemistry (Th)	32 + 8	3 hrs.
XIII	CH-206	Organic Chemistry (Th)	32 + 8	3 hrs.
XIV	CH-207	Practicals	60 (No Internal Assessment in Practical Exam)	7 hrs.

Note: Practical Exam will be held at the end of 4th Semester

Total Marks of III & IV Semesters = 120 + 120 + 60 = 300

B.Sc. Part-III (Vth) Semester

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.	Time
XV	CH-301	Inorganic Chemistry (Th)	32 + 8	3 hrs.
XVI	CH-302	Physical Chemistry (Th)	32 + 8	3 hrs.
XVII	CH-303	Organic Chemistry (Th)	32 + 8	3 hrs.

B.Sc. Part-III (VIth Semester)

Paper No.	Code No.	Nomenclature	Max. Marks Written + I.A.	Time
XVIII	CH-304	Inorganic Chemistry (Th)	32 + 8	3 hrs.
XIX	CH-305	Physical Chemistry (Th)	32 + 8	3 hrs.
XX	CH-306	Organic Chemistry (Th)	32 + 8	3 hrs.
XXI	CH-307	Practicals	60 (No Internal Assessment in Practical Exam)	7 hrs.

Note: Practical Exam will be held at the end of 6th Semester

Total Marks of V & VI Semesters = 120 + 120 + 60 = 300

TOTAL MARKS OF CHEMISTRY in B.Sc. degree = 300 × 3 = 900

B.Sc. I Year
Paper-VII (CH-107) Practicals

M.Marks:60

Time: 7 Hrs.

(One day in two sessions i.e. 9:00AM-12:30PM and 1:30PM-5:00PM)

Section-A (Inorganic)

Volumetric Analysis

1. Preparation of reference solutions.
2. **Redox titrations:** Determination of Fe^{2+} , $\text{C}_2\text{O}_4^{2-}$ (using KMnO_4 , $\text{K}_2\text{Cr}_2\text{O}_7$)
3. **Iodometric titrations:** Determination of Cu^{2+} (using standard hypo solution).
4. **Complexometric titrations:** Determination of Mg^{2+} , Zn^{2+} by EDTA.

Paper Chromatography

Qualitative Analysis of any one of the following Inorganic cations and anions by paper chromatography (Pb^{2+} , Cu^{2+} , Ca^{2+} , Ni^{2+} , Cl^- , Br^- , I^- and PO_4^{3-} and NO_3^-).

Section-B (Physical)

1. To determine the surface tension of at least two liquids using stalagmometer by drop no. and drop weight methods (Use of organic solvents excluded).
2. To study the effect of surfactant on surface tension of water.
3. To determine the viscosity of at least two liquids by using Ostwald's viscometer (Use of organic solvents excluded).
4. To determine the specific refractivity of at least two liquids.

Section-C (Organic)

1. Preparation and purification through crystallization or distillation and ascertaining their purity through melting point or boiling point
 - (i) Iodoform from ethanol (or acetone)
 - (ii) *m*-Dinitrobenzene from nitrobenzene (use 1:2 conc. HNO_3 - H_2SO_4 mixture if fuming HNO_3 is not available)
 - iii) *p*-Bromoacetanilide from acetanilide
 - iv) Dibenzalacetone from acetone and benzaldehyde
 - v) 2,4-DNP derivative of Benzophenone/Acetophenone.
2. To study the process of (i) sublimation (ii) Crystallization of camphor and phthalic acid

Distribution of marks

- | | | |
|----|------------|----------|
| 1. | Section-A | 15 marks |
| 2. | Section-B | 15 marks |
| 3. | Section-C | 15 marks |
| 4. | Viva-voce | 05 marks |
| 5. | Lab Record | 10 marks |

B.Sc. II Year
Paper XIV (CH-207) Practicals

M.Marks:60

Time: 7 Hrs.

(One day in two sessions i.e. 9:00AM-12:30PM and 1:30PM-5:00PM)

Section–A (Inorganic)

1.Gravimetric Analysis:

Quantitative estimations of, Cu^{2+} as copper thiocyanate, Ni^{2+} as Ni – dimethylglyoxime and Al^{3+} as oxinate.

2. Colorimetry:

To verify Beer - Lambert law for $\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ and determine the concentration of the given $\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ solution.

3.Preparations: Preparation of Cuprous chloride, tetra ammine cupric sulphate, chrome alum, potassium trioxalatochromate(III) and Nickel Hexammine chloride.

Section-B (Physical)

1. To determine the CST of phenol – water system.
2. To determine the solubility of benzoic acid at various temperatures and to determine the ΔH of the dissolution process.
3. To determine the enthalpy of neutralisation of a weak acid/weak base vs. strong base/strong acid and determine the enthalpy of ionisation of the weak acid/weak base.
4. To determine the enthalpy of solution of solid calcium chloride.
5. To study the distribution of iodine between CCl_4 and water.
6. Determine rate constant of hydrolysis of $\text{CH}_3\text{COOC}_2\text{H}_5$.

Section-C (Organic)

Systematic identification (detection of extra elements, functional groups, determination of melting point or boiling point and preparation of at least one pure solid derivative) of the following simple mono and bifunctional organic compounds: Naphthalene, anthracene, acenaphthene, benzyl chloride, *p*-dichlorobenzene, *m*-dinitrobenzene, *p*-nitrotoluene, resorcinol, hydroquinone, α -naphthol, β -naphthol, benzophenone, ethyl methyl ketone, benzaldehyde, vanillin, oxalic acid, succinic acid, benzoic acid, salicylic acid, aspirin, phthalic acid, cinnamic acid, benzamide, urea, acetanilide, benzanilide, aniline hydrochloride, *p*-toluidine, phenyl salicylate (salol), glucose, fructose, sucrose, *o*-, *m*-, *p*-nitroanilines, thiourea.

Distribution of marks

1.	Section A	15 marks
2.	Section B	15 marks
3.	Section C	15 marks
4.	Viva-voce	05marks
5.	Lab Record	10 marks

B.Sc. III Year
Paper-XXI (CH-307) Practicals

Max.Marks:60

Time: 7 Hrs.

(One day in two sessions i.e. 9:00AM-12:30PM and 1:30PM-5:00PM)

Section-A (Inorganic)

Semimicro qualitative analysis of mixture containing not more than four radicals (excluding interfering, Combinations and insolubles):

Pb^{2+} , Hg^{2+} , Hg_2^{2+} , Ag^+ , Bi^{3+} , Cu^{2+} , Cd^{2+} , As^{3+} , Sb^{3+} , Sn^{2+} , Fe^{3+} , Cr^{3+} , Al^{3+} , Co^{2+} , Ni^{2+} , Mn^{2+} , Zn^{2+} , Ba^{2+} , Sr^{2+} , Ca^{2+} , Mg^{2+} , NH_4^+ , CO_3^{2-} , S^{2-} , SO_3^{2-} , $S_2O_3^{2-}$, NO_2^- , CH_3COO^- , Cl^- , Br^- , I^- , NO_3^- , SO_4^{2-} , $C_2O_4^{2-}$, PO_4^{3-} , BO_3^{3-}

Section-B (Physical)

1. To determine the strength of the given acid solution (mono acid only) conductometrically.
2. To determine the solubility and solubility product of a sparingly soluble electrolyte conductometrically.
3. To determine the strength of given Ferrous ammonium sulphate solution potentiometrically.
4. To determine the molecular weight of a non-volatile solute by Rast method.
5. Preparation of acidic and basic buffers and comparison of their pH with theoretical values.
6. To determine the specific rotation of optically active substance (any two).

Section-C (Organic)

1. Thin Layer Chromatography

(Determination of R_f values and identification of organic Compounds)

Separation of a mixture of coloured organic compounds using common organic solvents.

2. To separate the binary liquid mixtures using distillation.

3. Synthesis of the following organic compounds:

- (a) To prepare salicylic acid from Aspirin.
- (b) To prepare p-bromoaniline from p-bromoacetanilide.
- (c) To prepare m-nitroaniline from m-dinitrobenzene.
- (d) To prepare S-Benzyl-iso-thiouonium chloride from Thiourea.

Distribution of marks

1.	Section- A	15 marks
2.	Section-B	15 marks
3.	Section-C	15 marks
4.	Viva-voce	05 marks
5.	Lab Record	10 marks

-----XXX-----

IGN COLLEGE, LADWA

DEPARTMENT OF CHEMISTRY

ATTENDACE CHART

OF

UNIVERSITY PRACTICAL EXAMINATIONS

2018-19

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B.Sc III year EXAMINATION, 200 April 2019

PRACTICAL ATTENDANCE CHART

Chart for Preparing List of each group for Practicals in Science and other Subjects
 Centre for Written Examination: Indira Gandhi National College, Ladwa
 Centre for Practical Examination: Indira Gandhi National College, Ladwa
 Subject: CHEMISTRY (CH-307) Date: 17.04.2019
 Group: I Time: 9:30 AM - 5:00 PM

Sr No	Roll No.	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner	Signature of the Candidate before the Practical Examiner
1	6367160	Manish	Manish	Manish
2	6367161	Kshama	Kshama	Kshama
3	6367162	Shobha	Shobha	Shobha
4	6367163	Ram Lal Sharma	Ram Lal Sharma	Ram Lal Sharma
5	6367164	Kajal	Kajal	Kajal
6	6367165	Ekta	Ekta	Ekta
7	6367166	Simran	Simran	Simran
8	6367167	Arshi	Arshi	Arshi
9	6367168	Naita	Naita	Naita
10	6367169	Shiv Kumar	Shiv Kumar	Shiv Kumar
11	6367171	Harman	Harman	Harman
12	6367193	Simran	Simran	Simran
13	6367199	Anjali	Anjali	Anjali
14	6367101	Bhavya	Bhavya	Bhavya
15	6367102	Amal Pandey	Amal Pandey	Amal Pandey
16	6367103	Jyoti	Jyoti	Jyoti
17	6367104	Shikha	Shikha	Shikha
18	6367105	Varshali	Varshali	Varshali
19	6367106	Shikha	Shikha	Shikha
20	6367107	Shikha	Shikha	Shikha
21	6367109	Tanika	Tanika	Tanika
22	6367110	Kavya	Kavya	Kavya

Total No. of Candidates allotted by the Principal: 22

Total No. of Candidates examined by the Examiner: 22

Total No. of Candidates absent in the Practical Examination: NIL

Signature of the Principal: [Signature]
 Address: Indira Gandhi National College, Ladwa Distt. Kurukshetra

Signature of the Practical Examiner: [Signature]
 Address: Post: V. Dharma Kumar, IIT College, Kamptee
 Signature & Address of the Co-Examiner (if any): Dr. Amit Kumar, IIT College, Ladwa

(To be sent to the Deputy/Asstt. Registrar (Secrecy) along with Award Lists in the Confidential Envelope: (ES-142)(5).

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B.Sc III year EXAMINATION, 200 April 2019

PRACTICAL ATTENDANCE CHART

Chart for Preparing List of each group for Practicals in Science and other Subjects

Centre for Written Examination I. G. N. College Ladwa

Centre for Practical Examination I. G. N. College Ladwa

Subject CHEMISTRY (CH-307) Date 18.04.2019

Group II Time 9:00AM - 5:00PM

Sr No	Roll No.	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner	Signature of the Candidate before the Practical Examiner
1	6367106	Rishu Aggarwal	Rishu	Rishu
2	6367111	Vishal	Vishal	Vishal
3	6367113	Himanshu	Himanshu	Himanshu
4	6367115	Tomu Mittal	Tomu Mittal	Tomu Mittal
5	6367116	Bharti	Bharti	Bharti
6	6367117	Anita	Anita	Anita
7	6367118	Kajal	Kajal	Kajal
8	6367119	Ritu Devi	Ritu Devi	Ritu Devi
9	6367120	Neha	Neha	Neha
10	6367121	Kalpa	Kalpa	Kalpa
11	6367122	Bhawna Rani	Bhawna Rani	Bhawna Rani
12	6367123	Shreuti	Shreuti	Shreuti
13	6367124	Shiwani	Shiwani	Shiwani
14	6367125	Palak	Palak	Palak
15	6367127	Parvesh Kumari	Parvesh Kumari	Parvesh Kumari
16	6367128	ABSENT	ABSENT	ABSENT
17	6367131	Alka Rani	Alka Rani	Alka Rani
18	6367132	Kajal	Kajal	Kajal
19	6367133	ABSENT	ABSENT	ABSENT
20	6367134	Ritu Rani	Ritu Rani	Ritu Rani
21	6367135	Neesu Devi	Neesu Devi	Neesu Devi
22	6367136	Kajal	Kajal	Kajal

Total No of Candidates allotted by the Principal 22

Total No of Candidates examined by the Examiner 20

Total No of Candidates absent in the Practical Examination 02

Principal
Signature [Signature]
Address I. G. N. College Ladwa Dist. Kurukshetra

Signature of Practical Examiner
Address Prof. Vikram Kumar
I. G. N. College Panipat
Signature & Address of the Co-Examiner (if any) [Signature]
Dr. Ravish

(To be sent to the Deputy/Asstt. Registrar (Secrecy) alongwith Award-Lists in the Confidential Envelope, (ES-42)(5).

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B.Sc III year EXAMINATION, 200 April 2019

PRACTICAL ATTENDANCE CHART

Chart for Preparing List of each group for Practicals in Science and other Subjects
 Centre for Written Examination I. G. N. College Ladwa
 Centre for Practical Examination I. G. N. College Ladwa
 Subject CHEMISTRY (CH-307) Date 19.04.2019
 Group III Time 9:00AM - 5:00PM

Sr No	Roll No.	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner	
1	6367137	Sarjan	Sarjan	Sarjan
2	6367138	Sachin	Sachin	Sachin
3	6367139	Simran	Simran	Simran
4	6367140	Am208	Am208	Am208
5	6367141	Nancy	Nancy	Nancy
6	6367142	Ankur	Ankur	
7	6367146	Payal	Payal	Payal
8	6367148	Sourjeet	Sourjeet	Sourjeet
9	6367153	Mehak	Mehak	Mehak
10	6367155	Komal Rani	Komal Rani	Komal Rani
11	6367158	Mahak Saini	Mahak Saini	Mahak Saini
12	6367159	ABSENT		
13	6367179	Veasha	Veasha	Veasha
14	6367175	Anil	Anil	Anil
15	6367176	Shweta	Shweta	Shweta
16	6367181	Aman Kumar	Aman Kumar	Aman Kumar
17	6367191	Gurdeep	Gurdeep	Gurdeep

Total No. of Candidates allotted by the Principal 17

Total No. of Candidates examined by the Examiner 16

Total No. of Candidates absent in the Practical Examination 01

Principal
Sigra Guntia College
LADWA Dist. Kurukshetra

Signature of Practical Examiner
 Address Prof. Vikram Kumar
I.G.N. College, Ladwa
 Signature & Address of the Co-Examiner (if any) (Signature)

Dr. Ravish K. Chauhan, I.G.N. College

(To be sent to the Deputy/Asstt. Registrar (Secrecy) alongwith Award-Lists in the Confidential Envelope. (ES-42)(5)

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)
 B.Sc II EXAMINATION, 200 April 2019

1/3

PRACTICAL ATTENDANCE CHART

Useful for Practicals in Science and other Subjects

Institution JGN College Ladwa

Chemistry
I

Date 24-04-2019
 Time 9:00 AM - 12:30 PM
1:30 PM - 5:00 PM

	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner	
1	180037704 Sahil	Sahil	Sahil
2	180037705 Kushal	Kushal	Kushal
3	180037706 Pardeep kumar	Pardeep kumar	Pardeep kumar
4	180037707 Arushi	Arushi	Arushi
5	180037709 Ravi	RAVI	RAVI
6	180037710 Parul	Parul	Parul
7	180037711	ABSENT	
8	180037713 Anju	Anju	Anju
9	180037714 Sonam	Sonam	Sonam
10	180037715 Swati Devi	Swati Devi	Swati Devi
11	180037716 Guljeet	Guljeet	Guljeet
12	180037719 Mehak	Mehak	Mehak
13	180037720 Samrithi Devi	Samrithi Devi	Samrithi Devi
14	180037722 Aanchal	Aanchal	Aanchal
15	180037725 Pinki	Pinki	Pinki
16	180037726 Sowati	Sowati	Sowati
17	180037729	ABSENT	
18	180037730 Harsh	Harsh	Harsh
19	180037731 Sneha	Sneha	Sneha
20	180037733 Muskan	Muskan	Muskan
21	180037734	ABSENT	
22	180037735 Prachi	Prachi	Prachi

22
HR

Total No. of Candidates examined by the Examiner 19
 Total No. of Candidates absent in the Practical Examination 03

Signature of Practical Examiner
 Address Prof. VIKRAM KUMAR
Dept of Chem, JB college, Panipat

Signature & Address of the Co-Examiner (if any)
Dr. Armit Kumar
Dept of Chem, JGN College, Ladwa

Registrar (Secretary) alongwith Awarde Lists in the Confidential

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B. Sc I year EXAMINATION, 200 April 2019

2/3

PRACTICAL ATTENDANCE CHART

Centre for Preparing List of each group for Practicals in Science and other Subjects
 Centre for Written Examination I G N College Ladwa
 Centre for Practical Examination I G N College Ladwa
 Subject CHEMISTRY Date 24.04.2019
 Group I Time M & E

Roll No	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner
23 180037736	Batnambish	Batnambish
24 180037737	Sahil	Sahil
25 180037740	Harun	Harun
26 180037742	ABSENT	
27 180037743	Sweety	Sweety
28 180037745	ABSENT	
29 180037746	Dhruvraj Sapkota	Dhruvraj Sapkota
30 180037748	Sapkota	Sapkota

Total No. of Candidates allotted by the Principal $22 + 8 = 30$

Total No. of Candidates examined by the Examiner $06 + 19 = 25$

Total No. of Candidates absent in the Practical Examination $02 + 03 = 05$

Signature of Practical Examiner
 Address Prof. VIKRAM KUMAR
Dept of Chem. I B College Panipat

Signature & Address of the Co-Examiner (if any)
Dr. Amit Kumar
Dept of Chem. I G N College Ladwa

To be submitted to the Deputy/Asstt Registrar (Secrecy) alongwith Award-Lists in the Confidential Form (S-142)(5)

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B.Sc II EXAMINATION, 200 April 2019

①

PRACTICAL ATTENDANCE CHART

One mark for each group for Practicals in Science and other Subjects

Institution: I.G.N. College Ladwa

Chemistry Practical I Date: 25-04-2019
Time: 9:00 AM - 12:30 PM
1:30 PM - 5:00 PM

1/2

	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner	
1.	170042901 Priyanka	Priyanka	Priyanka
2.	170042902 Pooja	Pooja	Pooja
3.	170042903 Anusha	Anusha	Anusha
4.	170042904 Anchal	Anchal	Anchal
5.	170042905 Anuradha	Anuradha	Anuradha
6.	170042906 Deepak Kumar	Deepak Kumar	Deepak Kumar
7.	170042907 Jyoti	Jyoti	Jyoti
8.	170042909 Jasmeet Kaur	Jasmeet Kaur	Jasmeet Kaur
9.	170042910 Deepika	Deepika	Deepika
10.	170042911 Sonampreet Kaur	Sonampreet Kaur	Sonampreet Kaur
11.	170042912 Sonu	Sonu	Sonu
12.	170042914 Jyoti	Jyoti	Jyoti
13.	170042915 Sachin Saini	Sachin Saini	Sachin Saini
14.	170042916 Paras Mandhan	Paras Mandhan	Paras Mandhan
15.	170042918 Swati Devi	Swati Devi	Swati Devi
16.	170042919	ABSENT	
17.	170042922 Lalit	Lalit	Lalit
18.	170042922 Shubham Puri	Shubham Puri	Shubham Puri
19.	170042924 Robin	Robin	Robin
20.	170042926 Kanchan	Kanchan	Kanchan
21.	170042927	ABSENT	
22.	170042928 Komal Kani	Komal Kani	Komal Kani

Date: 22

Total No. of Candidates examined by the Examiner: 20

Total No. of Candidates absent in the Practical Examination: 02

Signature of Practical Examiner: [Signature]

Address: Prof. Vikram Kumar

Dept of Chem: I.B. College Panipat

Signature & Address of the Co-Examiner (Lab): Dr. R.K. Chauhan

Dept of Chem: I.G.N. College Ladwa

to be submitted to the Registrar (Secretary) alongwith Award-Lists in the Confidential

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

B.Sc II EXAMINATION, 200 April 2019

②
2/2

PRACTICAL ATTENDANCE CHART

Chart for Preparing List of each group for Practicals in Science and other Subjects

Centre for Written Examination IGNOU College Kuruksh

Centre for Practical Examination IGNOU

Subject Chemistry Pract Date 25-04-2019

Group I Time 9:30 AM - 12:30 PM
1:30 PM - 5:00 PM

Sr No	Roll No	Signature of the Candidate before the Principal	Signature of the Candidate before the Practical Examiner
23.	170042932	Komal	Komal Komal
24.	170042935	Smriti Devi	Smriti Devi Smriti Devi
25.	170042937	Uma Devi	Uma Devi Uma Devi

Total No. of Candidates allotted by the Principal $22 + 03 = 25$

Total No. of Candidates examined by the Examiner $20 + 03 = 23$
Total No. of Candidates absent in the Practical Examination $02 + 0 = 02$

Signature of Principal
Address

Signature of Practical Examiner
Address Prof. Visham Kumar
Dept of Chem IGNOU College Kuruksh
Signature & Address of the Co-Examiner (if any) Dr. R.K. Chauhan
Dept of Chem IGNOU College Kuruksh

(To be sent to the Deputy/Asstt. Registrar (Secrecy) alongwith Award-Lists in the Confidential Envelope - LS-(42)/(5))