

B. Sc. B. Ed. (CBCS) Semester- IV
GROUP B: GENERIC COURSE (GC)

GCIR 202: INDIAN CONSTITUTION AND HUMAN RIGHTS

Time: 3 Hours

Max. Marks: 100

Credits- 4

Theory: 80, Internal: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 16 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 16 marks each.
- iv) All questions will carry equal marks.

Objectives: On completion of this course, the student teacher will be able to

- Know the importance, preamble and salient features of Indian Constitution
- Appreciate the significance of Fundamental Rights, Duties and Directive Principles of State Policy.
- Develop an understanding of the strength of the Union Government.
- Understand the functioning of the State Government for the unity and the strength of the Democracy.
- Know the importance of local self-Government and Panchayati Raj Institutions in India.
- Know the meaning, significance, the growing advocacy of Human Rights.

Transaction Mode: Through Lectures, Group discussions, Interactive sessions, field activities and use of Education Technology.

Course Contents

Unit I: Meaning and Importance of the Constitution

Preamble, Salient features, Constituent Assembly and the Spirit of the Indian Constitution.

Unit II: Fundamental Rights, Duties and Directive Principles

Fundamental Rights, Fundamental Duties, and the Directive Principles of the state policy of the Indian Constitution.

Unit III: Union, State and Local Self Governments

Union Government: Parliament, the President and Prime Minister: State Government: Governor and the Council of Minister: Judiciary: Functions and Powers: Panchayat Raj System.

Unit IV: Human Rights

Origin and Development of Human Rights, Growing Advocacy and Declining Trends of Human Rights, Rights of Scheduled Casts, Scheduled Tribes, Minorities, Children and Women, Human Rights Defenders, Human Rights Violation and Human Rights Organizations.

Suggested Readings:

1. M.V.Pylee, Indian Constitution, OUP, New Delhi
2. Granville Austin, Indian Constitution, OUP, New Delhi
3. RajaniKotari, Politics in India, OUP, New Delhi
4. Johari, J C, Indian Government and Politics.
5. S R Maheswari, Local Governments in India (Latest Edition)
6. R K Arora and RajaniGoyal, Indian Public Administration 1995.
7. C P Bhambri, Introduction to Indian Constitution.
8. Subash C Kashyap, The Working of Indian Constitution, NBT, New Delhi
9. Subash C Kashyap, Our Parliament, NBT, New Delhi
10. Granville Austin, Functioning of the Indian Constitution, NBT, New Delhi.
11. Bipan Chandra, India after Independence. Roopa, New Delhi 2000.
12. Arjun Dev, Source Book on Human Rights, NCERT, New Delhi.
13. Human Rights in India: Theory and Practice, National Book Trust, 2001.

GROUP C: CORE COURSE (CC) 1(IV)
PHY 202: PHYSICS: OPTICS AND LASER

Time: 3 Hours
Credits- 4

Max. Marks: 100
Theory: 60, Internal: 20, Practical: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 12 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 12 marks each.
- iv) All questions will carry equal marks.

Objectives: The student teacher will be able to:

- Know the fundamental concepts of Optics and Laser.
- Understand the design and working of Laser.
- Apply the concepts in understanding the various optical phenomena.
- Solve the problems related to optics.
- Analyze the optical phenomena in experiments of optics.

Course Contents

Unit I:

Interference of a light:

Division of wave front and division of amplitude, The principle of superposition, two-slit interference, Fresnel biprism, thin film interference, Newton's rings, application of interference in determination of wavelength and precision measurements.

Haidinger fringes:

Fringes of equal inclination, Michelson interferometer, its application for precision determination of wavelength, wavelength difference and the width of spectral lines, Intensity distribution in multiple beam interference, Fabry-Perot interferometer.

Unit II:

Fresnel diffraction:

Fresnel half-period zones, Types of zone plates, Circular aperture, Circular disc, Diffraction at a straight edge, Construction and working principle of Zone plate and its application as a lens.

Fraunhofer diffraction:

Diffraction at a single slit, double slits & N parallel slits and their intensity distribution, plane transmission diffraction grating, reflection grating and blazed

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grating, Concave grating and different mountings, diffraction at a circular aperture. Rayleigh criterion of Resolution, Resolving power of Telescope, Microscope, Grating and Prism.

Unit III:

Polarization and Optical Rotation:

Meaning and representation of Polarized light, Types of polarized light, Production of Polarized light, Brewster law, Malus law, double refraction, Phase retardation plates, Analysis of Polarized light as plane polarized, circularly polarized and Elliptically polarized light, Rotation of plane of polarization, Specific rotation and its experimental determination, Polarimeter (Laurent and Biquartz).

Unit IV:

Lasers: Laser system, Radiative and Non-radiative Transition mechanisms, Basic necessity for a Lasing device, Einstein's A and B coefficients, Spontaneous and Induced emissions, conditions for laser action, population inversion, Construction, Working principle and Applications of Ruby laser, He-Ne Laser and Semiconductor lasers. Basic concepts of Holography, Construction of a Hologram and reconstruction of the image.

Suggested Readings:

1. A K Ghatak, Physical Optics (Tata McGraw-Hill Publishing Co. Ltd, New Delhi).
2. D P Khandelwal, Optics and Atomic Physics (Himalaya Publishing House, Bombay, 1998).
3. F Smith and J Thomson, Manchester Physics series; Optics (English Language book Society and John Wiley, 1977).
4. Bom and Wolf, Optics.
5. K D Moltev, Optics (Oxford University Press)
6. Sears, Optics.
7. Jenkins and White, Fundamental of Optics (McGraw-Hill)
8. Smith and Thomson, Optics (John Wiley and Sons).
9. A K Ghatak, Physical Optics
10. B B Laud, Lasers and Non-linear Optics (Wiley Eastern 1986)

Practicals

Distribution of Marks for End Semester Practical Examination	
Activity	Marks
Experiments	10
Viva Voce	5
Record	5
Total Marks	20

All the following experiments are to be done. Few more experiments may be set at the institutional level.

1. To determine the wavelength of sodium light by Newton's Ring Method.
2. To determine the wavelength of three colours using diffraction grating.
3. To determine the wavelength of sodium light using Biprism.

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4. To determine the specific rotation of sugar solution by polarimeter.
5. To find out the wavelength of a given monochromatic (Sodium light) source using Michelson's interferometer and determination of D_1 & D_2 .
6. To determine the thickness of carbon paper by interference method.
7. To determine the wavelength of light using Helium-Neon Laser in I & II order diffractions.

GROUP C: CORE COURSE (CC) 2 (IV)
CHM 202: CHEMISTRY: INORGANIC CHEMISTRY

Time: 3 Hours
Credits- 4

Max. Marks: 100
Theory: 60, Internal: 20, Practical: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 12 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 12 marks each.
- iv) All questions will carry equal marks.

Objectives:

- To gain an understanding of the chemistry of transition and inner transition metals, coordination compounds, organometallic compounds, metal carbonyls of Transition Elements, Coordination chemistry and magnetic behaviour of complexes, Chemistry of Lanthanide and Actinides, concepts of Oxidation and Reduction and Principles involved in the extraction of the elements.

Course Contents

Unit I:

Transition Elements

General group trends with special reference to electronic configuration, variable valency, magnetic and catalytic properties, colour and spectral behaviour, ability to form complexes, stability of various oxidation states and e.m.f. comparative studies of Chemistry of the first, second and third transition series.

Inorganic Reaction Mechanism

Thermodynamic and Kinetic stability. Introduction to inorganic reaction mechanisms. Substitution reactions in square planar Complexes, Trans-effect, theories of trans effect. Determination of binary formation constant by pHmetry and spectrophotometry

Unit II:

Chemistry of Lanthanide and Actinides

Chemistry of Lanthanide: Occurrence and separation, electronic structure, oxidation states and ionic radii and lanthanide contraction, spectral and magnetic properties, complex formation and applications.

Chemistry of Actinides: Electronic configuration, oxidation states, actinide contraction, complex formation, spectral and magnetic properties, applications. Chemistry of separation of Np, Pu and Am from Uranium, similarities between the later actinides and later lanthanides.

Unit III:

Coordination Compounds

Werner's coordination theory and its experimental verification, effective atomic number concept, chelates, nomenclature of coordination compounds, isomerism in coordination compounds, valence bond theory of transition metal complexes. Limitations of valence bond theory, an elementary idea of crystal field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal-field parameters.

Oxidation and Reduction

Use of redox potential data- analysis of redox cycle, redox stability in water-Frost, Latimer and Pourbaix diagrams. Principles involved in the extraction of the elements.

Unit IV:

Organometallic Compounds, Metal Carbonyls & Nitrosyls

A. Organometallic compounds

Definition, nomenclature and classification of organometallic compounds, preparation, properties, bonding and applications of alkyls and aryls of Li, Al, Hg, Sn and Ti, a brief account of metal-ethylene complexes and homogenous hydrogenation.

B. Carbonyls and Nitrosyls

- a) **Metallic Carbonyls:** Metallic carbonyls General methods of Preparation, general properties, structure and nature of Metal carbonyls, bonding in carbonyls, Effective atomic number (EAN) rules as applied to metallic carbonyls. 18-electron rules applied to metallic carbonyls. Preparation, properties and structure of nickel tetracarbonyl, iron penta carbonyls, chromium hexa carbonyls, dimanganesedeca carbonyl, dicobaltocta carbonyl.
- b) **Metallic Nitrosyls:** Some metallic Nitrosyls: Metal nitrosyl carbonyls, metal nitrosyl halides, sodium nitroprusside (Preparation properties, structures and uses) structure and nature of M-N bonding in nitrosyl. Effective atomic number (EAN) rules as applied to metallic nitrosyls.

Suggested Readings:

1. R. C. Mehrotra and A. Singh Organometallic Chemistry :A Unified Approach, Wiley
2. A. G. Sharpe: Inorganic Chemistry, Pearson
3. Bell and Lott: Modern approach to Inorganic chemistry, Van Nostrand
4. Emelns and Anderson Principles of Inorganic Chemistry
5. G. L. Miessler and D. A. Tarr: Inorganic Chemistry, Prentice Hall
6. Cotton and Wilkinson, Advanced Inorganic Chemistry, 6th Edition, Wiley
7. Lee, J.D. Concise Inorganic Chemistry, ELBS.

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8. Douglas, B.E. and Mc Daniel, D.H., Concepts & Models of Inorganic Chemistry
9. Day, M.C. and Selbin, J. Theoretical Inorganic Chemistry, ACS Publications
10. Shriver and Atkins Inorganic Chemistry, W. H. Freeman and Company
11. James Huheey, Inorganic chemistry: Principles of Structure and Reactivity, Pearson Education India
12. Shriver and Atkins' Inorganic Chemistry, Oxford Press
13. Green wood, Chemistry of The Elements, Elsevier

Practicals

Distribution of Marks for End Semester Practical Examination	
Activity	Marks
Experiments	10
Viva Voce	5
Record	5
Total Marks	20

Synthesis and analysis

- a. Preparation of sodium trioxalatoferrate (III), $\text{Na}_3 [\text{Fe} (\text{C}_2\text{O}_4)_3]$ and determination of its composition by permanganometry.
- b. Preparation of copper tetraammine complex. $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$.
- c. Preparation of Ni-DMG complex, $[\text{Ni}(\text{DMG})_2]$.
- d. Preparation of *cis*- and *trans* – bisoxalatodiaqua chromate (III) ion.

Gravimetric Analysis

- a. Cu as Copper thiocyanate.
- b. Ni as Nickel dimethylgloxime

pH metry

- a. To determine normality of xN HCl by pH metry.
- b. To determine normality and dissociation constant of weak acid (xN CH_3COOH) by pH metry.
- c. To determine normality and dissociation constant of dibasic acid (xN oxalic acid/malonic acid/maleic acid) using 0.1N NaOH solution

GROUP C: CORE COURSE (CC) 3(IV)
ZOO 202: ZOOLOGY: ANIMAL PHYSIOLOGY AND ENDOCRINOLOGY

Time: 3 Hours

Max. Marks: 100

Credits- 4

Theory: 60, Internal: 20, Practical: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

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- ii) Q.No. 1 will be compulsory and will carry 12 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 12 marks each.
- iv) All questions will carry equal marks.

Objective:

To enable students to comprehend the modern concepts of physiological aspects on various organs and systems of animals and human being to comprehend chemical nature, biological molecules and physiological roles.

Course Contents

Unit I:

- Physiology of digestion: Chemical nature of food stuff (including micronutrients), various types of digestive enzymes and their digestive action in the alimentary canal, role of GI hormones in digestion, mechanism of absorption of digested food.
- Physiology of respiration: Mechanism and control of breathing, exchange of gases transport of respiratory gases (oxygen and carbon dioxide)

Unit II:

- Physiology of blood circulation
- Composition and function of blood.
- Blood groups (ABO and Rh)
- Blood coagulation – factors, mechanism, theories and anticoagulants.
- Origin, conduction and regulation of heart beat in mammals.
- Cardiac cycle, ECG
- Nerve physiology: structure and types of neuron, origin and conduction of nerve impulse,
- Synapse-structure, types, properties and signal transmission through synapses.

Unit III:

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- Muscle physiology: Ultra-structure and mechanism of contraction of skeletal muscle, summation and fatigue.
- Physiology of Excretion: Nitrogenous wastes, anatomy of mammalian kidney, structure of nephron, mechanism of urea and urine formation (including hormonal regulation) osmoregulation
- Physiology of Reproduction: hormonal control of male and female reproduction, implantation, parturition and lactation in mammals
- Female Reproductive cycle.

Unit IV: Endocrinology

- Hormones: Classification, properties of hormones.
- Mechanism of hormone action (peptide and steroid hormones)
- Endocrine glands: Pituitary gland: Location, anatomy and functions of hormones with hypothalamic regulation
- Thyroid gland: Location, anatomy, synthesis and function of T3 & T4
- Adrenal gland, Islets of Langerhans, Testes and Ovaries

Suggested Readings:

1. A text book of Medical physiology, Guyton and Hall, Elsevier Pub (South Asia) 2013.
2. Animal Physiology, K Schmidt – Nielson, 5thed, Cambridge Pub 2013.
3. Biochemistry D Voet & JG Voet, Wiley 2011
4. Animal Physiology by A. Maria Kutikan & N. Arumugam – (Saras Publication, Nagercoil, Tamil Nadu).
5. Animal Physiology and biochemistry by K.V. Sastry – (Rastogi Publications, 2008).
6. Regulatory mechanism in Vertebrates by Kamleshwar Pandey and J.P. Shukla- (Rastogi Publications, 2008)
7. Animal Physiology by K.A. Goyal and K.V. Sastry – (Rastogi Publication 2008)
8. Endocrinology and Reproductive Biology by K.V. Sasyry - (Rastogi Publication 2008)
9. Animal Physiology by Arora M.P. (1989)- Himalaya Publications House.
10. Textbook of medical Physiology by Guyton A.C. & Hall J.E (1996)- (W.B. Saunders & Co.)
11. General and Comparative Physiology by Hoar W.S. (1983) – Prentice Hall Publication)
12. A textbook of Animal Physiology by Hurtkar P.C. & Mathur P.N. (1976) – S Chand & Co.
13. General Endocrinology by Turner C.D. & Gangara J.T. (1971) - W.B. Saunders & Co.
14. Animal Physiology, Biochemistry and Immunology, Dr KC Soni Hindi Edition, College book centre, Chaura Rasta, Jaipur
15. Animal Physiology and Immunology, Dr KC Soni Hindi Edition, College book centre, Chaura Rasta, Jaipur

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16. Mammalian Endocrinology and Animal Behavior , Dr VS Pawar, Hindi Edition ,
College book centre, Chaura Rasta, Jaipur

Practical

Distribution of Marks for End Semester Practical Examination	
Activity	Marks
Experiments	10
Viva Voce	5
Record	5
Total Marks	20

Course Contents

1. Effect of temperature and pH on the salivary amylase enzyme activity.
2. Preparation of Blood smears of frog / lizard/ bird / mammals.
3. Identification of blood groups (ABO) and Rh factor in man.
4. Estimation of Hemoglobin by Sahils method.
5. Enumeration of RBC in blood samples.
6. Enumeration of WBC in blood samples.
7. Preparation of Haemin Crystals.
8. Effect of different concentrations of NaCl on RBC.
9. Measurement of blood pressure, Heart beat and Pulse rate.
10. Study of bleeding time, Coagulation time of blood.
11. Dissect and demonstrate the endocrine glands in rat and man (Chart or model).
12. Study of Histological slides of the following endocrine gland of mammal testis, ovary, thyroid, adrenal, pitutary, Islets of Langerhans.

GROUP C: CORE COURSE (CC) 1(IV)
BOT 202: BOTANY: PLANT TAXONOMY AND UTILIZATION OF PLANTS

Time: 3 Hours

Max. Marks: 100

Credits- 4

Theory: 60, Internal: 20, Practical: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 12 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 12 marks each.
- iv) All questions will carry equal marks.

Objectives: After completion of this course the student teachers will be able to:

- Understand the principles of plant nomenclature;
- Understand the evolution of taxonomic thought and the various systems of classification;
- Understand the diversity that exists among angiosperms;
- Make detailed study of selected families;
- Understand the utility of plants and plant products in human welfare.

Course Contents

Unit I: Angiosperm taxonomy: Brief history, aims and fundamental concepts of artificial, natural and phylogenetic system of classification, Bentham & Hooker, Engler & Prantl and Hutchinson, system of classification.

Herbarium; Tools and techniques, important herbaria and botanical gardens of India and their importance.

Unit II: Botanical Nomenclature: Principles and rules of ICBN, type of concept, taxonomical categories, principle of priority, identification keys, floras.

Diversity of flowering plants as illustrated by members of the families – Annonaceae, Fabaceae, Brassicaceae, Malvaceae, Apiaceae.

Unit III: Diversity of flowering plants as illustrated by members of the families –Acanthaceae, Apocynaceae, Asteraceae, Solanaceae, Lamiaceae; Amaranthaceae, Euphorbiaceae, Liliaceae and Poaceae.

Unit IV: Origin, Cultivation and value added products of following:

Cereals: Rice, Wheat and Maize Oil Yielding Plants: Mustard, Groundnut and Coconut
Fibre Yielding Plants: Cotton, Sun-hemp. Spices: Cardamom, Fennel, Cumin, Coriander.
Medicinal plants: Opium, Cinchona, Sarpagandha. Beverages: Tea & Coffee.
Rubber: General Account

Suggested Readings:

1. Jones, A.B. and A.Luchsinger, 1979, Plant Systematics, McGraw Hill Book Co., New York.
2. Priti Shukla and Misra, 1988, Taxonomy of Angiosperms, Vikas Publishing House, New Delhi.
3. Hutchinson, J., The families of Flowering Plants, Clarendon Press, Oxford.
4. Davis, P.H. and V.H. Heywood, 1963, Principles of Angiosperm Taxonomy, Oliver and Boyd, London.
5. Heywood, V.H. and D.M. Moore (Ed.) 1984, Current concepts in Plant Taxonomy, Academic Press, London.
6. Singh, G. 1999, Plant Systematics: Theory and Practice, Oxford and IBH Pvt. Ltd., New Delhi.
7. Stace, C.A. 1989, Plant Taxonomy and Biosystematics (2nd Ed.), Edward Arnold, London.
8. Singh V. and D.K. Jain, 2005, Taxonomy of Angiosperms, Rastogi Publications, Meerut.
9. Kochhar S.L. 1981, Economic Botany in the Tropics, MacMillan India Ltd. Delhi.
10. Vashista P.C. 1980, Taxonomy of Angiosperms, Sultan Chand & Co., New Delhi.
11. Lawrence, G.H.M. 1950 Taxonomy of Vascular Plants, MacMillan, London.

Practicals

Distribution of Marks for End Semester Practical Examination	
Activity	Marks
Experiments	10
Viva Voce	5
Record	5
Total Marks	20

All the following experiments are to be done. Few more experiments may be set at the institutional level.

- Study of selected technical terms and their definitions (used in the description of plant).
- Detailed study of at least one plant specimen per family as given in the theory syllabus.
- Field study (3-5 days) to a nearby forest, for collection, identification and submission of herbarium sheets;
- To recognize the botanical name, family, part used and products of economic

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importance as per theorsyllabus;

- Preparation and submission of an illustrated inventory of 5 medicinal plants used in indigenous systems of medicine and allopathy (Write their botanical name, family, part used, active principle and diseases/disorders for which they areprescribed).

GROUP C: CORE COURSE (CC) 3(IV)
MTH 202: MATHEMATICS: ABSTRACT ALGEBRA

Time: 3 Hours
Credits- 4

Max. Marks: 100
Theory: 80, Internal: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 16 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 16 marks each.
- iv) All questions will carry equal marks.

Objectives:

By the end of the semester the students will be able to develop understanding of the abstract concepts of groups, rings, special classes of rings which in turn make them appreciate modern mathematical concepts.

Unit I:

Sets, Relations, functions and binary operations, binary operations in contrast to unary and ternary operations, equivalence relation, Group: Definition, examples and simple properties of groups and subgroups.

Unit II:

Permutation groups, cyclic groups, cosets, Lagrange's theorem, homomorphism and isomorphism of groups, Cayley's theorem, Normal subgroups and Quotient groups, fundamental theorem of homomorphism of groups.

Unit III:

Rings: Definition and examples. Residue classes of rings, Special classes of rings, integral domain, field, division ring, simple properties of ring, sub ring, sub field, ring homomorphism and ring isomorphism.

Unit IV:

Ideal, principal ideal, principal ideal ring, quotient ring, prime ideal, maximal ideal, Euclidean rings and its properties, polynomial rings.

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Suggested Readings:

1. Topics in Algebra: I.N. Herstein, Wiley Eastern, New Delhi, 2nd ed. 1975.
2. A Course in Abstract Algebra: V.K. Khanna and S.K. Bhambri, Vikas Pub. House, New Delhi, 2nd rev. ed. 1998.
3. Modern Algebra: A.R. Vashistha, Krishna PrakashanMandir, Meerut, 2nd rev. ed., 1971.
4. Algebra: M. Artin (1991) Prentice Hall.

GROUP E: PROFESSIONAL EDUCATION COURSES (PEC)
I: Perspectives in Education (PE)
PEIS 202: INCLUSIVE SCHOOLING

Time: 3 Hours

Max. Marks: 100

Credits- 4

Theory: 80, Internal: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 16 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 16 marks each.
- iv) All questions will carry equal marks.

Objectives of the Course: On completion of the course, the student teacher will be able to:

- Demonstrate knowledge on different perspectives in the area of education of children with disabilities;
- Reformulate attitudes towards children with special needs;
- Identify needs of children with diversities;
- Plan need-based programmes for all children with varied abilities in the classroom;
- Use human and material resources in the classroom;
- Use specific strategies involving skills in teaching special needs children in inclusive school;
- Plan and execute appropriate learner-friendly evaluation procedures;
- Incorporate innovative practices to respond to education of children with special needs;
- Contribute to the formulation of policy
- Implement laws pertaining to education of children with special needs.

Course Contents

Unit I: Paradigms in Education of Children with Special Needs

- Historical perspectives and contemporary trends.
- Defining Special Needs: ways of looking of Educational Difficulties -individual deficit view vs. curriculum view.
- Approaches of viewing disabilities: The charity model, the bio-centric model, the functional model and the human rights model.

- Concept of special education, integrated education and inclusive education.

Unit II: Legal and Policy Perspectives

- Recommendations of the Salamanca Statement and Framework of Action, 1994, Educational Provisions in the UNCRPD, 2006.
- Constitutional Provisions; Persons with Disabilities Act, 1995, (PWD Act); Rehabilitation Council of India Act, 1992, National Trust Act 1999 and RTE Act, 2009, Rights of Persons with Disability Act 2016, National Institutes.
- National Policy - Education of Students with Disabilities in the National Policy on Education, 1986, POA 1992.
- Integrated Education for PWD, Children (IEDC, 1974), Scheme for Inclusive Education for PWD (IEDC, 2000) and Education of Special Focus Groups under the Sarva Shiksha Abhiyan (SSA, 2000); Scheme of Inclusive Education for PWD at secondary School (IEDSS, 2009).

Unit III: Inclusive practices in schools

- Visual impairment, Hearing impairment, Locomotor and Neuromuscular disorders, Mental Retardation, Specific learning disabilities.
- Concept and philosophy of inclusive education.
- Teaching competencies required for inclusive classroom.
- Peer tutoring, Cooperative learning, social learning, system approvals Multisensory teaching, reflective teaching.
- Supportive services required for meeting special needs in the classroom.
- Duty of educational institutions, appropriate governments and local authorities to provide, promote and facilitate inclusive education and towards creation of barrier-free environment for persons with disabilities.

Unit IV: Assessment, teaching and development of supportive services for CWSN

- Concept and techniques of assessment.
- Identification and functional assessment of children with special needs.
- Implication of assessment for instructional planning and placement.
- Developing lesson plan and TLM for children with special needs.
- Involving community resources as source of support to Inclusive school.

Modes of Learning Engagement:

- The study materials must be presented to the trainees and discussions and reflections should be encouraged.
- The students should be exposed to good practices of dealing with special needs either through videos or through actual visits.
- It is important to engage the participants in a lot of cooperative group work so that they start valuing alternative points of view and significance of collaboration.
- The student trainees can also be asked to write their reflections on various topics.

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- Presentation of case studies and discussion.
- Interaction with children with disabilities studying in schools and spending quality time with them is of great help in changing attitudes and developing empathy.
- Projects on various topics can help the students to acquire in depth knowledge.
- Audio- Visual presentations and demonstrating various practices.

Practicum/ Tutorials:

1. Reflective written assignments
2. Conducting seminar on chosen topics
3. Group reports
4. Field visit reports/ project report
5. Case studies on different disabilities

Suggested Readings:

1. Farrell, M. (2004). Special Educational Needs: A Resource for Practitioners. New Delhi. Sage Publications.
2. Hallahan & Kanffman J.M. (1984). Exceptional Children. Prentice Hall.
3. Hegarty S. & Mithu Alur (2002). Education and children with Special need. New Delhi. Sage Publication.
4. The Persons with Disability Act (1995). Ministry of Social Justice and Empowerment. Government of India, India, MSJE.
5. Chadha, A. (1999). A Handbook for Primary School Teacher of Children with learning Disabilities. New Delhi. Education Consultant of India Limited.
6. UNESCO (1994). The Solamanca Statement and Framework for Action on Special needs Education. Paris. UNESCO.
7. Koul,V.(1993). Early Childhood Education Programme. New Delhi. NCERT.
8. Muralidharan, R. (1990). Early Stimulation Activities for Young Children. New Delhi. NCERT.
9. Panda, K., C. (1990). Education of Exceptional Children. New Delhi. Vikas Publications.
10. Arora, K, Dave, P & Sinclair, S. (1987). Detection and prevention of mentally Handicapped. New Delhi. NCERT.
11. NCERT and UNESCO (2004). Inclusive Education: An Orientation package for Teacher Educators. Department of Education of Groups with special needs. NCERT and UNESCO.
12. NCERT and UNESCO (2000). Assessment of Needs for Inclusive Education. Report of the First Regional Workshop. NCERT and UNESCO.
13. Mani, M., N., G. (2001). Inclusive Education in Indian context. INRDC.
14. Banine, D (1988). Handicapped children in Developing countries: Assessment, Curriculum and Instruction - Edmonton (Alberta). University of Alberta.

GROUP E: PROFESSIONAL EDUCATION COURSES (PEC)

I: Perspectives in Education (PE)

Semester IV
PELT 202: LEARNING AND TEACHING

Time: 3 Hours
Credits- 4

Max. Marks: 100
Theory: 80, Internal: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 16 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 16 marks each.
- iv) All questions will carry equal marks.

Objectives of the Course: The student teacher will be able:

- To develop scientific attitude for the process of teaching & learning.
- To develop understanding about the relationship of cognitive, social and emotional development with learning process
- To provide an overall view on teaching & learning style and ideas to enhance these activities
- To introduce student – teachers with teaching skill, component and parameters of effective teaching
- To develop insight for perfect teaching by its overall perspectives in detail.

Course Contents

Unit I: Psychological Domains of Learning and Teaching

- Meaning and principles of development, relationship between development and learning.
- Meaning of cognition and its role in learning, socio-cultural factors influencing cognition and learning.
- Social development – Meaning, Importance, Social process and its effect on Teaching & Learning, theory of social construction(Bruner)
- Emotional development: - Meaning, Process, Need to Study its effect on Teaching and Learning Process.

Unit II: Effective Teaching and Learning

- Effective Teaching: Meaning, Component and Parameters of Effective Teaching, Identification of Teaching Skills, Principles of Teaching, Classroom instruction strategies, Teacher as a Learner, Modernising the classroom, Teacher behaviour and classroom climate (Flanders' interaction analysis system).

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- Teaching for culturally diverse students, theory of culturally relevant pedagogy.
- Creative Teaching: Meaning, concept and ways of teaching creatively.
- Unlearning to learn
- Learning- Meaning, and characteristics, factors influencing learning, Types of learning (Insight, Constructivist and Social), Tradition and changes in view of the learning process a shift from teaching to learning.
- Principles of learning, Quality of learning.
- Role of teacher in teaching-learning situations: (a) Transmitter of knowledge (b) Teacher as a Role Model (c) Facilitator for Encouraging Children to Construct knowledge (Constructivist Approach) (d) Co-learner, concept mapping
- Classroom Instruction Strategies (General Introduction)
- Role of motivation in learning- Concept, Motivational Strategies to be used in classroom teaching.

Unit III: Learning Style and Teaching Style

- Diversity among learners and learning needs (with reference to special needs).
- Multilingual background: Concept, Multilingual background of children and its classroom implications.
- Learning Style: - concept, Types and importance in Teaching –Learning process, factors affecting learning style.
- Introduction of teaching Models: Concept attitude, advance organization and inquiry model.
- Teaching Style: - Concept, Types and effect on learners’ learning process, factor affecting teaching Style.
- Teacher behaviour, effect of Verbal and Non-Verbal behaviour of Teacher on students’ learning.
- Use of out of class experiences of children in classroom teaching, Organisational climate and teaching.

Unit IV: Learning in ‘Constructivist’ Perspective

- Distinctions between learning as ‘construction of knowledge’ and learning as ‘transmission and reception of knowledge’.
- Social-Constructivist perspective (also Bruner and Ausubel’s perspective) and applications of Vygotsky’s ideas in teaching.
- Understanding processes that facilitate ‘construction of knowledge’:
 - (i) Experiential learning and reflection
 - (ii) Social mediation
 - (iii) Cognitive negotiability
 - (iv) Situated learning and cognitive apprenticeship
 - (v) Meta-cognition.
- Creating facilitative learning environment.
- Teachers’ attitudes, expectations– enhancing motivation, Achievement motivation, positive emotions, self-efficacy, collaborative and self-regulated

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learning. (The focus is on learning as a constructive rather than a reproductive process. The learner- centered orientation has implications for understanding learning as contextual and self-regulated process and following suitable classroom practices).

Practicum/ Tutorials:

- Analysing the behaviour of your fellow student-teachers, find out how socio-cultural factors have influenced & shaped their learning.
- Write a report about some best teachers in your past experiences & write some special features of their ways of teaching.
- Conduct a case study of an individual (Educationally exceptional – Differently-abled).
- Conduct and interview of 02 students of multilingual background and list the problems face by them in classroom conditions.
- Trace out some of the odd Non-Verbal behaviour of any 05 fellow student teachers.

Suggested Readings:

1. चौबे एस.पी, 2005, बाल विकास व मनोविज्ञान के मूल तत्व
2. बृदबमचज च्नइसपौपदह ब्उचंदल च्पअंजम स्जकए डींद लंतकमदए छमू कमसीपण
3. भूषण शैलेन्द्र, 2007-08, शैक्षिक तकनीकी, अग्रवाल पब्लिकेशन, आगरा-7
4. शर्मा डॉ. आर.ए., 2008, शिक्षा के मनोविज्ञान आधार, इंटरनेशनल पब्लिशिंग हाउस, मेरठ।
5. कुलश्रेष्ठ एस.पी., 2007-08, शैक्षिक तकनीकी के मूल आधार, अग्रवाल पब्लिकेशन, आगरा
6. ऑवेरॉय डॉ. एस. सी, 1999, शिक्षक तकनीकी के मूल तत्व, आर्य बुक डिपो, करोल बाग, नई दिल्ली
7. शर्मा डॉ. आर.ए., शिक्षण अधिनम में नवीन प्रवर्तन 2005, आर. लाल बुक डिपो, मेरठ।
8. व्यास हरिचन्द्र एवं शर्मा अधिगम और विकास के मनोसामाजिक आधार, राजस्थान हिन्दी ग्रंथ अकादमी जयपुर – 4
9. सिंह, रामपाल एवं सिंह, नगेन्द्र (2013) शिक्षण एवं अधिगम के मनोसामाजिक आधार, अग्रवाल पब्लिकेशन, आगरा
10. सिंह नगेन्द्र एवं सेवानी अशोक, (2013): अधिगम का मनोविज्ञान, अग्रवाल पब्लिकेशन, आगरा
11. सिंह रामपाल एवं सेवानी अशोक, (2013): शैक्षिक तकनीकी एवं कक्षा कक्ष प्रबंधन, अग्रवाल पब्लिकेशन, आगरा
12. तंतं त्प ाण तलं. 2008 ए उमहं जतमदके पद पदेजतनबजपवदंस जमबीदवसवहलए ; च्त्वहतंतउउमक पदेजतनबजपवद र. समंतदपदहए सबबंस इववा कमचवजए उममतनज ; नचद्ध
13. शर्मा, डॉ. आर.ए. 2005, शिक्षण अधिगम में नवीन प्रवर्तन, आर.लाल बुक डिपो, मेरठ।
14. Siddiqui, Mujebul Hasan, 2009, teachings of teaching (classroom teaching). APH publishing, New Delhi.
15. Mathur, Dr. S.S, Mathur, Dr. Anju. 2007-2008 development of learner and teaching learning process, agrawal publication Agra.
16. Rao. V.K, Reddy, R.s. 1992, learning and teaching commonwealth publishers, New Delhi.
17. Bhatnagar, A.B, Bhatnagar, M., Bhatnagar, A 2008, Development of learner and teaching learning process, R.lal book depot, Meerut.

GROUP E: PROFESSIONAL EDUCATION COURSES (PEC)

III: Curriculum and Pedagogic Studies (CPS)

Semester IV

CPSKC 202: KNOWLEDGE AND CURRICULUM

Time: 3 Hours
Credits- 4

Max. Marks: 100
Theory: 80, Internal: 20

NOTE FOR PAPER SETTER FOR THEORY EXAMINATION

- i) Paper setter will set 9 questions in all, out of which students will be required to attempt 5 questions.
- ii) Q.No. 1 will be compulsory and will carry 16 marks. There will be atleast 4 short-answer type questions selected from the entire syllabus.
- iii) Two long answer type questions will be set from each of the four units, out of which the students will be required to attempt one question from each unit. Long-answer type questions will carry 16 marks each.
- iv) All questions will carry equal marks.

Objectives of the Course: on the completion of course, the student teacher will be able to:

- Gain insight into the various forms of knowledge and disciplines and their implications to school subjects.
- Develop an understanding about how knowledge is organized into curriculum.
- Develop an understanding of the concept of curriculum, curriculum framework and the related concepts.
- Develop an understanding of the various foundations of curriculum planning.
- Acquaint the student with the existing approaches to curriculum design.
- Reflect on various trends in curriculum development.

Course Contents

Unit I: Concept of Curriculum

- Meaning and nature of curriculum, need and importance of curriculum in schools.
- Differentiating curriculum framework, curriculum and syllabus, their significance in school education.
- Facets of curriculum- core curriculum, hidden curriculum, activity based curriculum, interdisciplinary curriculum, spiral curriculum and integrated curriculum.
- Curriculum visualized at different levels: national level, state level, school level, class level and related issues.

Unit II: Curriculum Determinants and Considerations

- Determinants of curriculum (philosophical, psychological, sociological, political).
- Considerations in curriculum development: (at school level)

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- Forms of knowledge and its characterization in different school subjects.
- Socio-cultural context of students –multi-cultural, multilingual aspects.
- Learner characteristics.
- Teachers' experiences and concerns.
- Critical issues: environmental concerns, gender differences, inclusiveness, value concerns and issues, social sensitivity.
- Curriculum and school subject knowledge selection process and purpose.
- Selection of school subject knowledge: criteria and agencies.
- Legitimization of knowledge selection: socio-cultural and politico-economic forces.
- Problematization of school knowledge selection: debates to identify change and continuity:
- Constitutional ideals and national priorities.
- Global concerns.

Unit III: Curriculum Development

- Process of curriculum development
- Formulating aims and objectives.
- Criteria for selecting knowledge and representing knowledge in the form of different subjects.
- Organizing fundamental concepts and themes vertically across levels and integrating themes within (and across) different subject.
- Selection and organization of learning situations.

Unit IV: Curriculum Implementation and Evaluation

- Role of state and national agencies in implementing curriculum.
- Teachers' role in generating dynamic curricular experiences through-
 - Flexible interpretation of curricular aims.
 - Contextualization of learning.
 - Varied learning experiences.
 - Learning resources.
 - Translating curricular objectives into instructional planning.
- Need and evaluation of effective curriculum construction with reference to existing pedagogies and instructional approaches, teacher training, textbooks and instructional materials.
- Approaches and criteria to curriculum evaluation and text-book analysis.
- Role of MHRD, NCERT and the states in curriculum reform.

Modes of Learning Engagement:

A set of readings need to be compiled, which includes those which clarify key concepts, trace the evolution of alternative conceptions of curriculum, contextualize the problem of curriculum, indicate ways of developing, implementing and reviewing curriculum. In addition, national curriculum documents and relevant secondary school syllabi should also be made available.

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The following modes of learning engagement are suggested:

- Introductory lectures on key themes and concepts
- Study and discussions on the process of curriculum development at various levels
- Study of the NCF 2005 as well as the earlier curriculum frameworks and a prescribed syllabus;
- Discussion on purpose of curriculum framework;
- Critical evaluation of the extent to which the curriculum framework is reflected in the syllabus (in small groups)
- Interactions with school teachers and principal about how they operationalize the prescribed curriculum into an action plan; how curriculum is evaluated and revised
- Observing the kinds of curricular experiences, a school provides apart from classroom teaching and discern their relevance vis a vis learner development; for this interactions with teachers and students could be held
- Study of selected readings and presentations based on these

Practicum/ Tutorials:

1. Preparation of any topic from the course content and presenting in the classroom.
2. Analytical study of school- curriculum implementation.
3. Development of a unit test and its try out.
4. Evaluation of a school textbook.
5. Nature and level of participation in discussions.
6. Presentations based on readings.
7. Field notes on observations and interviews in schools, and linking these with concepts introduced.
8. Analysis of curriculum development/implementation processes within a school, based on field notes and observations.

Suggested Readings:

1. Bob moon and Patricia murphy (Ed). (1999). Curriculum in context. London. Paul chapman publishing.
2. Chryshochoos, N.E. (1998). Learner needs and syllabus design. M.A. Dissertation. England. School of english. University of Durham.
3. D.j. Flinders and S.J. Thorton (eds). (1997). My pedagogic creed. New York. The curriculum studies reader, routledge.
4. G.w. Ford and Lawrence pungo. (1964). The structure of knowledge and the curriculum. Chicago. Rand mcnally & company.
5. Groundland, N.E. (1981). Measurement and evaluation in teaching. New York. Macmillan.
6. Kelley, a.b. (1996). The curricular theory and practice. Us. Harper and row.
7. Kumar Krishna. (1997).What is worth teaching. New Delhi. Orient longman.

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8. Taba, Hilda. (1962). Curriculum development. Theory and practice. New York. Har court, brace and Wald.
9. Tyler, R.W. (1949). Basic principles of curriculum and instruction. Chicago. University of Chicago press.
10. Kochhars.k. (1970). Secondary school. New Delhi. Sterling Publishers administration.
11. The report of education commission. (1964-66). MHRD govt. of India.
12. भटनागर, सुरेश. (1996). शैक्षिक प्रबन्ध और शिक्षा की समस्याएँ. मेरठ. सूर्या पब्लिकेशन।
13. गुप्ता एल. डी. (1990). उच्च शैक्षिक प्रशासन. हरियाणा साहित्य अकादमी चण्डीगढ़।
14. सुखिया एस. पी. (1965). विद्यालय प्रशासन एवं संगठन. आगरा. विनोद पुस्तक मंदिर।
15. वशिष्ठ के.के. (1985). विद्यालय संगठन एवं भारतीय शिक्षा की समस्याएँ, मेरठ. लायल बुक डिपो।
16. देव आचार्य महेन्द्र. (1998). विद्यालय प्रबन्ध, राष्ट्रवाणी. दिल्ली. प्रकाशन।
17. शर्मा आर.ए. (1995). विद्यालय संगठन तथा शिक्षा. मेरठ. प्रशासनसूर्या पब्लिकेशन।
18. व्यास हरिष्यन्द्र. (2003). शैक्षिक प्रबन्ध और शिक्षा की समस्याएँ. नई दिल्ली. आर्य बुक डिपो, 30 नाईवालाकरौलबाग।