

Scheme of Examination and Courses of Study
B.Sc. Home Science Part II,2018
Duration of Theory Examination: 3 hrs

PAPER NO.	NOMENCLATURE OF PAPERS	MAX Th.	MARKS Pr.	HOURS Th	WEEK Pr.
	Enviouemental studies(compulsory)	100		4	
MAIN PAPERS					
8.	Extension and Communication II Community Development Perspectives and Approaches	100	50	4	2
9.	Foods and Nutrition II Nutritional Biochemistry	100	50	4	2
10.	Foods and Nutrition III Food Science	100	50	4	2
11.	Family Resource Management II Consumer Economics	100	50	4	2
12.	Human Development II Principles of Early childhood care and Education	100	50	4	2
13.	Textile and Clothing II Textiles and Laundry Science	100	50	4	2
	Total	600	300	24	12
	Grand Total		900		38

NOTE:-PRACTCAL WORK LOAD IS TO BE COUNTED 1;1

Compulsory Paper of Environmental Studies

Compulsory in 1 year for all streams at undergraduate level

Time 3 hrs

Pass Marks 36

Max. Marks 100

Theory

Theory paper will contain questions. The students are required to attempt five questions in all including question no. 1 which will be compulsory.

Q1 short answer type. Ten question of two marks each (compulsory)

10X2= 20 marks

Q2 to Q9 essay type question of 20 marks each (attempt any four)

The students are required to visit some field or sites mentioned in the syllabus under the guidance of a teacher. The teacher shall certify that the student have visited the site and should further inform their respective principal in writing regarding the same.

Note:

1. The marks secured in this paper shall not be counted in awarding the division to a candidate.
2. The candidate has to clear compulsory paper in three chances.
3. Non appearing or absent in the examination of compulsory paper will be counted a chance.

CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES FOR UNDERGRADUATE COURSES OF ALL BRANCHES OF HIGHER EDUCATION

UNIT-I: The Multidisciplinary nature of environmental studies

Definition, scope and importance

Need for public awareness

UNIT-II: Natural Resources

Renewable and non-renewable resources:

Natural resources and associated problems.

(a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.

(b) Water resources: Use and over-utilization of surface and groundwater, floods, drought, conflicts over water, dams-benefits and problems.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies.

(f) Land resources: Land as a resource, Land degradation, man induced Landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles.

UNIT-III Ecosystems

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:
 - a Forest ecosystem
 - b Grassland ecosystem
 - c Desert ecosystem
 - d Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT 4: Biodiversity and its conservation

- Introduction- Definition: genetic, species and ecosystem diversity.
- Biogeographical classification of India.
- Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as a mega-diversity nation.
- Hot- spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India.
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT 5: Environmental Pollution

Definition

- Causes, effects and control measures of:-
 - a. Air pollution
 - b. Water pollution
 - c. Soil pollution
 - d. Marine pollution
 - e. Noise pollution
 - f. Thermal pollution
 - g. Nuclear hazards
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution

- Pollution case studies.
- Disaster management: floods, earthquake, cyclone and landslides.

UNIT 6: Social Issues and the Environment

- From Unsustainable to Sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns. Case Studies.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland and reclamation.
- Consumerism and waste products.
- Environmental Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation.
- Public Awareness.

UNIT 7: Human Population and the Environment

- Population growth, variation among nations.
- Population explosion- Family Welfare Programme.
- Environment and Human health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and Child Welfare.
- Role of Information Technology in Environment and human health.
- Case Studies.

UNIT8: Field Work

- Visit to a local area to document environment assets-river/forest/ grasslands /hill/mountain.
- Visit to local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystems-pond, river, hill slope, etc.

स्नातक अनिवार्य विषय – पर्यावरण विज्ञान

इकाई प्रथम

पर्यावरण अध्ययन की बहुआयामी प्रकृति, परिभाषा एवं महत्व जन जागृति की आवश्यकता

इकाई द्वितीय : प्राकृतिक संसाधन

नवीनीकरण एवं अनवीनीकरण संसाधन :- प्राकृतिक संसाधन एवं उसके संबंधित समस्याएं

1. वन संसाधन : उपयोग एवं अतिशोषण, वनोन्मूलन केस अध्ययन, टिम्बर निष्कर्षण, खनन एवं उनके वनों एवं जनजातियों पर प्रभाव
2. जलसंसाधन : सतही एवं भूजल का उपयोग एवं अतिपभोग, बाढख सूखा, जल विवाद, बांधो की समस्याएं एवं लाभ।
3. खनिज संसाधन : उपयोग एवं अतिशोषण, खनिज संसाधन के उपयोग एवं निष्कर्ष के पर्यावरणीय प्रभाव, केस अध्ययन
4. खाद संसाधन : विश्व खाद्य समस्याएं कृषि एवं अतिचारण के कारण होने वाले परिवर्तन, आधुनिक कृषि के प्रभाव, उर्वरक एवं पीडकनाशक जनित समस्याएं, जलाकान्ति, लवणीयता, केस अध्ययन।
5. उर्जा संसाधन : बढ़ती हुई डर्जा आवश्यकताएं, नवीनीकरण एवं अनवीनीकरण, उर्जा संसाधन, उर्जा संसाधनो का वैकल्पिक उपयोग केस अध्ययन।
6. भुसंसाधन : भूमि एक संसाधन, भूअपघटन, मानवजनित भूस्खलन मृदा अपरदन एवं मरुस्थलिकरण, प्राकृतिक संसाधनों के संरक्षण में व्यक्तित्व भूमिका सतत् जीवनचर्या के लिए संसाधनों का उपयुक्त उपयोग।

इकाई तृतीय : परिस्थितिकी

- परिस्थितिकी तंत्र की अवधारणा
- परिस्थितिकी तंत्र की संरचना एवं कार्यप्रणाली
- उत्पादक, उपभोक्ता, अपघटक
- पारिस्थितिकी तंत्र में उर्जा प्रवाह
- पारिस्थितिकी अनुक्रमण
- खाद्य श्रृंखला, खाद्यजाल एवं पारिस्थितिकी स्तूप
- परिचय, प्रकार, विशेषताएं, गुण, संरचना एवं कार्यप्रणाली
 - अ. वन पारिस्थितिकी तंत्र
 - ब. घास के मैदान पारिस्थिकी तंत्र
 - स. मरुस्थल पारिस्थितिकी तंत्र
 - द. जलीय पारिस्थितिकी तंत्र (तालाब, धारा, झील, नदियां, समुद्र)

इकाई चतुर्थ : जैव विविधता एवं संरक्षण

- परिचय – परिभाषा: जीनीय, प्रजातीय एवं पारिस्थितिकी विविधता
- भारत का जैवभौगोलिक वर्गीकरण
- जैवविविधता का महत्व, उपभोगीय उपयोगिता, उत्पादकीय उपयोगिता, सामाजिक, नैतिक सौन्दर्य बोध एवं वैकल्पिक मूल्य
- वैश्विक : राष्ट्रीय एवं स्थानिक स्तर पर जैव विविधता
- भारत : एक मैगाविविधता राष्ट्र
- जैवविविधता के खतरे : आवासक्षय, वन्यप्राणियों का शिकार, मानव – वन्यप्राणियों के बीच विरोधाभास
- भारत की विलुप्तप्राय एवं स्थानिक प्रजातियां
- जैव विविधता का संरक्षण : स्व स्थानीय एवं पूर्व स्थानी संरक्षण

इकाई पंचम : पर्यावरण प्रदुषण

– परिभाषा, कारण, प्रभाव एवं नियंत्रण उपाय

1. वायु प्रदुषण
2. जल प्रदुषण
3. मृदा प्रदुषण

4. समुद्री प्रदूषण
5. ध्वनि प्रदूषण
6. तपीय प्रदूषण
7. नाभीकीय खतरे

- ठोस अपशिष्ट प्रबंधन : शहरी एवं औद्योगिक अपशिष्ट के कारण प्रभाव एवं नियंत्रण उपाय
- प्रदूषण निवारण में व्यक्तिगत भूमिका
- आपदा प्रबंधन : बाढ़, भूकम्प, चक्रवात एवं भूस्सलन

इकाई षष्ठम् : सामाजिक मुद्दे एवं पर्यावरण

- असतत् से सतत् विकास
- उर्जा से संबंधित शहरी समस्याएं
- जल संरक्षण, वर्षा जल संचयन, जल प्रवाह प्रबंधन
- लोगो का पुर्नवास एवं पुनः नियोजन
- समस्याएं एवं चिन्ताएं केस अध्ययन
- पर्यावरण नीति, मुद्दे एवं संभव समाधान
- जलवायु परिवर्तन, वैश्विक तापवृद्धि, अम्लवर्षा, ओजोनपरत क्षरण
- परमाणु दुर्घटनाएं एवं पूर्णाहुति, केस अध्ययन
- बंजर भूमि उद्धार
- उपभोक्तावाद एवं अपशिष्ट उत्पाद
- पर्यावरण निवारण नियम
- वायु निवारण (निवारण एवं नियंत्रण) प्रदूषण नियम
- जल (निवारण एवं नियंत्रण) प्रदूषण नियम
- वन्य जीव संरक्षण नियम
- वन संरक्षण नियम
- पर्यावरण कानूनो के पवर्तन में शामिल मुद्दे
- जन जागरुकता

इकाई सप्तम : मानव जनसंख्या एवं पर्यावरण

- जनसंख्या वृद्धि, राष्ट्रों के बीच भिन्नता
- जनसंख्या विस्फोट, परिवार कल्याण योजना
- पर्यावरण एवं मानव स्वास्थ्य
- मानव अधिकार
- मौलिक रक्षा
- एच.आई. वी./एड्स
- महिला एवं शिशु कल्याण
- पर्यावरण एवं मानव स्वास्थ्य में सूचना एवं प्रौद्योगिकी की भूमिका
- केस अध्ययन (घटनात्मक/उदाहरणात्मक)

इकाई अष्टम् : स्थानीय क्षेत्रों में यात्रा

- पर्यावरण दस्तावेजों के लिये नदी/वन/घास के मैदान, पहाड़ी, पहाड़
- स्थानीय दूषित क्षेत्रों की यात्रा – शहरी/ग्रामीण/औद्योगिकी/कृषि
- स्थानीय पेड़ों, कीड़ों एवं पक्षियों का अध्ययन –
- सरल पारिस्थितिकी तंत्र का अध्ययन – तालाब, नदी, पहाड़ी तलहटी

MAIN PAPERS

Paper-8

EXTENSION AND COMMUNICATION II

Community Development - Perspectives and Approaches.

Hours/Week : 4 Hours/ Week

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

Content :

UNIT I

1. Sociology

- a) Meaning, Definition and Nature of Sociology.
- b) Relationship between Sociology and Home Science

2. Social Structure and System

- a) Meaning, Characteristics, types of
 - i) Society
 - ii) Community - Rural & Urban
 - iii) Institutions - Social, Economic, Political & Others
 - iv) Social Groups v) Family vi) Marriage & Kinship

3. Social Relations : Analysis of Social Relations in

- a) Caste & Class ii) Economic Life - Poverty iii) Religion & Culture
- iv) Environment v) Gender vi) Political System

4. Social Change & Control

- a) Meaning and Need of social change and control
- b) Impact of Industrialization,Urbanization, Moderization, Globalization on the Indian social Structure.

UNIT II

5. Community Development

- a) Meaning and Definition of Community, Development and Community Development.
 - b) Objectives, Philosophy and Principles of Community Development.
 - c) History of Extension and Community Development work in India since independence.
 - d) Scope and organizational set up of community development/extension programs in India.
- 6. Panchayati Raj in India** - Concept, Philosophy objectives & Challenges, Problems, Structural organization, History and role in community development.
- 7. Community Development Programme Approach**
- a) Multi - Purpose
 - b) Target Group
 - c) Growth Centered
 - d) Area
 - e) Minimum needs
 - f) Antyodaya
 - g) Integrated
- Critical reflection of these on community development efforts.

UNIT III

- 8. Approaches and methods of socio - economic analysis**
- a) Rapid Rural Appraisal
 - b) Participatory Rural Appraisal
 - c) Survey, Case studies, Observations
- by participant & C.D. worker
- 9. Women and Development Approaches**
- a) 'Welfare' approach - women's role as wives and mothers emphasized.
 - b) 'Anti-Poverty' approach - women's income generation programmes - integrating women in development.
 - c) 'Efficiency' approach - emphasis on women's key role in production.
 - d) 'Equity' approach - combating patriarchy and exploitation, subordination and oppression of women.
 - e) 'Empowerment' approach - Process of women discovering in power within themselves to tackle the problems in their life situations.
- Critical review of these approaches in practice.
- 10. Scope of Home Science Extension Education in women development and community development.**

PRACTICALS

Duration of Examination : 3hrs

Max Marks : 50

No. of Hours/Wk - 2 hr

Min Pass marks :18

1. Visit to the rural/urban community where some community development/extension programmes are going on.
2. Assess any one ongoing programme in that area.
3. Presentation of the report on the programme and socioeconomic condition of the area.
4. Practical use of RPA/PRA methods.

Distribution of Marks :

1. File & Record	20 marks
2. Presentation of Report	20 marks
3. Viva Voce	10 marks
Total :50 marks	

References :

1. Dhama, O.P. & Bhatnagar, O.P. : Extension and Communication for Development, Oxford and IBH Publishing Co., New Delhi, 1985.
2. Extension Education in Community Development, Directorate of Education Ministry of Food and Agriculture, Government of India, New Delhi, 1961.
3. Supe, S.V. An Introduction to Extension Education, Oxford & IBH Publishing Co. Pvt. Ltd. , New Delhi, 1980
4. Waghmare, S.K. Teaching Extension Education Prashant, Publishers, Vallabh Vidyanagar, 1980.
5. Singh, R; Text Book of Extension Education, Sahitya Kala Prakashan, Ludhiyana, 1987.
6. Staly, John; People in Development: A Training Manual for Groups, SEARCH, Bangalore India, 1982.
7. Desai, V; Rural Development (Volumes 1-6) Programs and Strategies, Himalaya Publishing House Bombay, 1988.
8. Patnayak R; Rural Development in India, Anmol Publication, New Delhi 1990.
9. Reddy, A.; Extension Education, Sri Lakshmi Press, Bapatla, 1987.
10. Baidyanath M; Poverty, Unemployment and Rural Development, Himalaya Publishing House, Bombay, 1991.
11. Devdas, R.P.; Text Book of Home Science, NCERT, New Delhi, 1980.
12. Mukherjee N. ; Villagers Perception of Rural Poverty through the Mapping Methods of Participatory Rural appraisal or participatory Learning Methods : PRA/PALM series. No. 2, Service Road, Domlurlayont, Bangalore - 560071. MVRADA, 1992.
13. Singh, K. ; Principles of Sociology, Prakashan Kendra , Lucknow, 1980.
14. Thingalaya, N.K. ; Rural India-Real India, Himalaya Publishing House, Bombay, 1986.
15. Alminyso, Social Change and Development, Sage Publications Pvt. Ltd., Madras, 1990.
16. Desai V.; A study of Rural Economics System Approach, Himalaya Publishing House, New Delhi, 1990.
17. Mann, Peter H.; Methods of Social Investigation, Basic Blackwell, 1985.

Journals.

1. Changing Villages, PPS Gussain for consortium on Rural Technology, D-320, Laxmi Nagar, New Delhi - 110092.
2. Journal of Rural Development, The National Institute of Rural Development, Rajendranagar, Hyderabad - 500029.

3. Social Welfare, Central Social Welfare Board, Samaj Kalyan Bhavan, B- 12, Tona Crescent, Institutional Area South of IIT , New Delhi - 110016.

Paper - 9
FOODS AND NUTRITION - II
Nutritional Biochemistry

Hours/Week : 4 Hours/ Week

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

Objectives : The Course lays the foundation for understanding the functioning of metabolic processes at cellular level, and the role of various nutrients in these processes. This course will enable students to

1. Develop an understanding of the principles of biochemistry (as applicable to human nutrition)
2. Obtain an insight into the chemistry of major nutrients and physiologically important compounds .
3. Understand the biological processes and systems as applicable to human nutrition.

Contents :

UNIT I

1. **Introduction to biochemistry** - Definition, Objectives, scope and inter-relationship between biochemistry and other biological sciences.
2. **Carbohydrates** - Definition, Classification, structures, and properties of mono-di-and poly- saccharides, functions of Carbohydrates.
3. **Lipids** -
 - a) Definition, Classification, structures, physical, and chemical properties with reaction of different functional groups of lipids. Hydrogenation of fats. Significance of acid value, iodine value and saponification value, functions of Lipids.
 - b) Lipoproteins - types, composition, role and significance in diseases.
4. **Proteins** - Definition, classification, structures and properties of amino acids essential and non-essentials, peptides and proteins, functions of proteins.

UNIT II

5. **Enzymes** – Definition, types and classification of enzymes, definition and types of coenzymes, specificity of enzymes, isozymes, factors affecting velocity of enzyme catalysed reactions. Enzyme inhibition.
6. **Molecular aspects of transport**-passive diffusion and active transport.
7. **Fluid**, electrolyte and Acid-base balance.
8. **Vitamins** – Chemistry and biochemical role of vitamins – fat soluble – A, D, E and K and water soluble – B₁, B₂, niacin, B₆ and C.
9. **Minerals** – Biochemical role of inorganic elements – calcium, phosphorous, magnesium, iron, copper, sodium, potassium, iodine, flourine and zinc.

UNIT III

10. **Intermediary metabolism** – General considerations Elementary study of intermediary metabolism of Carbohydrates lipids and proteins – glycolysis gluconeogenesis, glycogenesis, glycogenolysis, regulating blood glucose level, oxidation and biosynthesis of fatty acids, synthesis and utilisation of ketone bodies, ketosis, general reactions of amino acid metabolism – deamination, transamination, decarboxylation and entry of amino acid into TCA cycle, urea cycle, Citric acid cycle (TCA).
11. **Biological Oxidation** – Electron transport chain, oxidative phosphorylation, energy conservation.
12. **Introduction to genetic control of metabolism** –Nucleic acids- types composition and structures. Replication, transcription, genetic code. Elementary knowledge of biosynthesis of proteins.

PRACTICALS

Hours/week : 2 hrs

Max Marks : 50

Duration of Examination : 3 hrs

Min Pass Marks : 18

This course will enable the students to

1. Be familiar with qualitative tests and quantitative determinations.

1 : Carbohydrates

- Reactions of mono, di and polysaccharides and their identification in unknown mixtures.
- Estimation of reducing and total sugars in foods.
- Estimation of lactose in milk.

2: Fats

- Reactions of fats and oils.
- Determination of Acid value saponification value and Iodine number of natural fats and oils.
- Estimation of crude fat content of foods by Soxhlet's method.

3: Proteins

- Reactions of proteins in foods.

- Reactions of amino acids and their identification in unknown mixtures.
- Estimation of total N of foods by Kjeldahl method.

4: Vitamins

- Estimation of ascorbic acid content of foods by titrimetric method and colorimetric method.

5: Minerals

- Estimation of calcium in CaCO_3 by EDTA titrimetric method.
- Estimation of chloride in table salt by titrimetric method.
- Estimation of phosphorous by colorimetric method.

Distribution of Marks

i.	Files, Records etc.	10 Marks
ii.	Qualitative analysis (two radicals/compounds)	20 Marks
iii.	Quantitative analysis	
	a. Principles and methods	-6
	b. Observation & calculation	-8
	c. Results & precautions	-6
	Total -	50 Marks

Note : Atleast one observation of each experiment should be checked by one of the examiners.

References :

1. Bell, GH, Davidson, JN. And Smith, DE. ; Text Book of Physiology and Biochemistry, ELBS & Churchill Livingstone.
2. Berry, A.K. : A Text book of Biochemistry, Tata Mc graw Publishing Co. Ltd. New Delhi.
3. Conn, E.E. Stumpf P.K. Brueing, G. And Doi R.H. : Outlines of Biochemistry, John Willy & Sons, N. York.
4. Devlin T.M. (1986) : 2nd Ed. Text book of Biochemistry with Clinical correlations , John Wiley and sons.
5. Indian Standards Institutions, (1985) ; ISI Handbook of food Analysis, Parts I – XI, Manak Bhawan, New Delhi.
6. Lehninger, A.L., Elson, D.L. and Cox, M.M. (1993) : 2nd Ed. Principles of Biochemistry, CBS Publishers and distributors.
7. Mazur, A. And Harrow, B. :Text book of Biochemistry, WB Saunders Co, Philadelphia.
8. Murray , R.K. Granner, D.K. Mayes, P.A. and Rodwell , V.W. (1993) : 23rd Ed. Harper's Biochemistry. Lange Medical Books.
9. Oser, B.L., (1965) : 14th Ed. Hawk's Physiological Chemistry Mcgraw Hill book Co.
10. Rao, K.R. : Textbook of biochemistry, Pentice 4 Hall of India Pvt. Ltd. NewDelhi.
11. Stryer L. (1995) : Biochemistry Freeman WH and Co.

12. Sundararaj , P. and Siddhu, A., (1995) : Qualitative test and quantitative procedures in Biochemistry – a practical Manual, Wheeler Publishing.
13. Varley , H., Gowenlock, A.H. and Bell, M. (1980) : 5th Ed. Practical and clinical chemistry, Vol 1, William Heinemann Medical books Ltd.
14. West, E.S., Todd, W.R., Mason, H.S. and Van Bruggen, J.T. (1974) : 4th Ed. Text book of Biochemistry, Amerind Publishing Co. Pvt. Ltd.
15. White, A Handler P., Smith E.L., Stelten, D.W (1959): 2nd Ed. Principles of Biochemistry, Mc Graw Hill Book Co.
16. William, S. : 16th Ed. JAOAC, Official methods of analysis of the association of Official Analytical Chemists.
17. Swaminathan, Ms (1985) : Essential of Food and Nutrition VI : Fundamentals aspects VII : Applied Aspects. Bangalore Printing Co. Ltd.

Paper –10
FOOD AND NUTRITION – III
Food Science

Hours/Week : 4 Hours/ Week

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

Objectives :The course will enable the students to

1. Get acquainted with the composition of different foodstuffs.
2. Understand the chemistry of foods.
3. Apply the theoretical aspects in ensuring food quality.

Contents :

UNIT I

1. **Introduction to Food Science and Chemistry :**Importance and scope of food science
2. **Physio-chemical properties of foods.** –study of composition, colloids, osmotic pressure, hydrogen ion concentration (pH), bound water in foods.
3. **Sensory Evaluation** –Definition , use of Sensory analysis in product evaluation, Method of Sensory Evaluation (in brief).
4. **Carbohydrate foods –**
 - a. **Starchy Foods-**
 - i. Structure of Starch Cell

- ii. Changes produced in starch cell during cooking
 - iii. Factors requiring control during starch cookery
 - iv. Various preparations using starchy foods.
- b. Cereals**
 - i. Structure and Composition
 - ii. Processes done before cooking – milling, polishing, parboiling, flaking, and parching, roasting.
 - iii. Various ways of using cereals – whole grain, flour-coarse, fine & refines, convenience foods, cereal food products.
- c. Sugars-**
 - i. Various types of sugar products – composition, manufacturing processes and uses
 - ii. Properties of sugar.
 - iii. Sugar cookery – behavior of sugar in concentrated solutions, uses and various preparations.

UNIT II

5. Protein foods –

(A) Animal Sources :

a. Milk and milk products :

Kinds, composition, nutritive contribution.

Preparation of milk products in brief: curd , khoa, paneer , cheese and milk powder

Processing techniques – Pasteurization, Homogenization.

Use of milk in food preparations – effect of heat, acid, enzymes and salt, various uses.

b. Eggs :

Structure, Composition and nutritive value, measures of quality and grading of eggs.

Egg Cookery – factors affecting whipping quality of eggs and heat coagulation of egg protein. Uses of egg in cookery. Methods of cooking egg and egg dishes.

c. **Flesh foods** : (meat, fish and poultry) – kinds, composition and nutritive value, structure of muscle Postmortem changes and aging of meat, factors affecting tenderness. Meat cookery – changes during cooking . Curing Process.

(B) Vegetable Sources :

a. Legumes and Pulses :

- i. Structure , composition ; effect of methods like soaking, germination and fermentation, effect of acid and soda during cooking.
 - ii. Various preparations, incorporation of pulses with other food groups
- b. **Nuts and Oilseeds** : Nutritive Value and importance.

6. Fats and Oils :

- a. Kinds (edible), composition and properties.
- b. Manufacturing process – separation/ extraction, refining process and hydrogenation.
- c. Importance in cooking.
- d. Change in fats and oils on heating. Storage of used oils.
- e. Rancidity of fats.

UNIT III

7. Protective Foods : Fruits and Vegetables

- a. Classification, composition and importance in diet.
- b. Changes occurring during maturation and ripening.
- c. Pigments present.
- d. Cooking of vegetables and changes that take place during cooking : effect of heat, acid and alkali.
- e. Pectin, gum and applications in food processing.

8. Introduction of special foods : Novel food, convenience food, space food, sports food, designer foods, processed foods , uncommon & non – conventional food.

9. phytochemicals

10. Food additives :types, and functions.

11. Food Safety :

- a. Causes of spoilage
- b. Sources of contamination
- c. Food borne infections, infestations and intoxication – causes.
- d. Preventing spread of diseases through safe food handling, personel hygiene.

12. Food preservation:

- a. Definition
- b. Importance of preserving food.
- c. Principles of food preservation.
- d. Methods of food preservation – at home and commercial.

PRACTICAL

Duration of Examination: 3 Hours

Max Marks : 50

No of periods/week: 2hrs

1. Organoleptic evaluation of foodstuffs.
2. **Starch and Cereal Cookery :-**
 - a. Examination of starches under the microscope.
 - b. Various preparations showing.
 - i. Dextrinisation, gelatinization and thickening abilities – effect of heat, types of starch, concentration of starch, fat, acid, protein, heating, agitation, and ingredients.
 - ii. Gluten formation and factors influencing its formation.
 - c. Preparation of selected common recipes.
3. **Sugar – Cookery :**
 - a. Preparation showing syrups of various strengths.
 - b. Preparation in which :
 - i. Size of crystals is controlled.
 - ii. Crystal formation is prevented.
 - iii. Some functions of sugars are shown.
4. **Pulses , Nuts and oilseeds :**
 - a. Effect of nature of water, acid and alkali on texture and doneness of pulses their use and preparation of selected recipes.
 - b. Ways of making complete proteins.
5. **Cooking with fats and oils :** studying different factors affecting fat absorption. Suitability of different fat sources to different products.
6. **Milk cookery :** preparations using milk and milk products.
7. **Egg cookery :**
 - a. Preparation showing functions of egg in cooking – as foaming, coating, binding, flavouring and colouring agent.
 - b. Effect of time, temperature, salt and acid on coagulation of egg protein.
 - c. Egg white foam – factors contributing to volume and stability.
 - d. Various ways of using egg: boiled, poached , fried, scrambled, plain and puffy omelets, egg curry, etc.
8. **Vegetable cookery:**
 - a. Effect of acid, alkali, heating, covering and cooking on the colour and doneness of vegetables.
 - b. Preparation of selected common recipes.
9. **Cooking of flesh foods :**Preparation of selected common recipes using meat, fish, and poultry. (Optional)
10. **Frozen desserts :** Sourffle and Ice creams.
11. **Preparation of Jams, Jellies, Pickles, Preserves, Sauces etc.**
12. **Baked Products :** Cakes and Biscuits.
13. Visit to a food – processing Unit.

Distribution of Marks

1. Files & Records	10
2. Planning (2 Problems)	10
3. Preparation – results	12
4. Method of work & cleaning.	5
5. Service	5
6. Identification of (a) Starch grains (2)	3
7. Viva voce	5
Total	50

References ;

1. Charley, H: Food Science, John Wiley and Sons.
2. Dowell P. Bailey A(1980) : The book of Ingredients, Dorling Kinderley :td. London.
3. Huges O, Bennion, M (1970) : Introductory foods, 5th Ed. MacMillan Publishing Co.
4. Lawies, S (1998) : Food commodities, Heienmenn Ltd London.
5. Mc Williams, M. : Experimental food Laboratory Manual, Subject Publication N. Delhi.
6. Mc Williams, M. : Food Fundamentals, John Wiley and Sons.
7. Morr, M.L. And Ir. Milter, T: An Introductory Foods- a laboratory Manual of Food preparation and Evaluation. Mac Millan Publishing Co.
8. Padmanabhan D.: The spices, National Council of Education Research and Training.
9. Paul P.C. and Palmer, H.H. : Food Theory and Application, John Wiley and Sons.
10. Peckham, G.C. : Foundations of Food Preparation. MacMilln Publishing co.
11. Philip, T.E. (1988) : Modern Cookery for teaching and the trade 4th Ed. Orient Longman, Bombay.
12. Potter, N.N. : Food Science CBS Publisher and Distributers N. Delhi.
13. Prithi, J.S. (1979) : Spices and Condiments, National book trust, New Delhi.
14. Pyke, M. : Food Science and Technology, Johan Z Murray, London.
15. Rajalakshami, R.: Applied Nutrition, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
16. Robinson, C.H. lawler M.R. Chenoweth W.L. and Garwick A.E. (1986) : Normal and Therapeutic Nutrition 17th Ed. MacMillan Publishing Co.
17. Swaminathan, M.S. (1985) : Essentials of Food And Nutrition VI : Fundamental Aspects VII : Applied Aspects.
18. Sethi, M. and Rao, ES. (2001): Food science, Experiments and Applications. CBS Publications and Distributors, N. Delhi.
19. Srilakshmi, B. (1997) : Food Science, New age International (P) Ltd., Publishers , N. Delhi.
20. Khader, V. (2001) : Textbook of Food Science and Technology. ICAR, N. Delhi.

Paper - 11
FAMILY RESOURCE MANAGEMENT II
Consumer Economics

Hours/Week : 4 Hours/ Week

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

UNIT I

1. Consumer Economics :

Definition of consumption and consumer, types of consumer, factors affecting consumer.

2. Wants –definition, classification, characteristics ,factor affecting wants

3. House hold Income – meaning, types and sources of income,factors affecting family income,ways of supplementing family income.

UNIT-II

4. Family budget-definition, importance and steps in making budget

5.Family expenditure- meaning, types, importance and factors affecting family expenditure.

6.Saving and investment- meaning,importance, types and factors determining saving,criteria for judging good investment and saving

7. Market :- Definition, types, characteristics ,channels of distribution.

UNIT III

8. Consumer education –Rights and responsibilities of consumer,consumer protection act 1986 ,consumer legislation ,consumer redressal mechanism,citizen charter and right to information act.

9. Entrepreneurship- definition,need and significance of entrepreneurship development in India,challenges faced by women entrepreneur ,major steps in setting up a small scale project.

PRACTICALS

Hours/week ; 2 hrs

Exam duration : 3 hrs

Max Marks :50

Min Pass Marks : 18

PRACTICAL

1. Study the function of –Retail store,Mobile retailer,Cooperative stores,Super market,Big malls,Multiplex ,Credit Card ,Direct Marketing,Tele marketing ,Mail Order,Vending machines and e-shopping.
2. Conducting case studies of citizens charter in Utilization of Services.
3. Planning and implementation of consumer guidance and counseling centre.
4. Preparation of small scale plan.

Marks Distribution :

1. Students are expected to submit files and reports of market survey.	10 Marks
2. Viva	10 Marks
3. Practical related to topic No.2,3	15 Marks
4. Practical related to topic No.4	15Marks
Total	50 Marks

References :

1. Leland, J. Gordan Stew art, Lee (1974) Economics and Consumer – 7thed D'Von Nostrand Co N.Y.
2. Om Welers (1974): Who Buy – A study of the consumer.
3. Sherlekar, S.A. (1986) : Track Practices and Consumers, Himlayan Publishing House (Unit I, VI)
4. Kolter Philip, Armstrong Gary (1992) : Principles of marketing 5th – ed Prentice Hall of India New Delhi.
5. David H. Bangs, Jr: The market planning guide 3rd ed. Gangotera Pub.
6. Sarkar A : Problems of consumer in modern India, Discovery publishing House.
7. Jones, Bridget (2000) Entertain in istyle, London ; Annes Publishing Ltd.
8. Gill, Robert, W. (1984) Rendering with paper nd ink 2nd Ed.
9. Willar Mak (1960) Know how to draw, London B.T. Batiford Ltd.
10. Chaudhary Rohit (editor) English Lettering and alphabets, New Delhi, Gaurav Publishing House.

Principles of Early Childhood Care and Education (ECCE)

Hours/Week : 4 Hours/ Week

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

Contents :

UNIT I

- 1. Early Childhood Education**
 - a. Nature and meaning
 - b. Need and importance of ECCE
 - c. Objectives of Early Childhood Care and Education
- 2. Types & Curriculum Models of Early childhood education.**
 - a. Kindergarten , Montessori, Nursery, Open, Balwadi types.
 - b. Child Development, verbal/cognitive, Sensory/cognitive, Verbal/Didactic Models.
- 3. Organization of early childhood Care and Education Centres –**
 - a. Site, Building, Classrooms, Staff
 - b. Curriculum, Equipments,
 - c. Records & Registers, Supervision and Evaluation.
 - d. Parent participation and Parent education.
 - e. Early Childhood Education Training Programmes.
- 4. Educational Media, Materials and Aids of ECCE**
 - a. Play materials, Learning materials.
 - b. Art Education and Activities for the Pre-school Child.

UNIT II

- 5. Adolescence**
 - a. Definition, stages of Adolescence
 - b. Main characteristics of Adolescence, Physical changes in Adolescence
 - c. Emotional life in Adolescence, Socialization in Adolescence
 - d. Problems in Adolescence, Morality in Adolescence, juvenile Delinquency
- 6. Personality Development**
 - a. Definition, meaning, determinants of personality
 - b. Development of personality in different stages of human development

7. Exceptional Children:Definition,types of Exceptional Children,Problems Faced by parents of Exceptional Children

Unit-III

8. Problem Child and types and corrective measures of problem child
9. Guidance and counseling:Need ,Importance and types.
10. Parent- Child Relationship:Determinents of Parent-Child Relationship
11. Intellectual ability:Definition,Types of ability,Types of intelligence tests

PRACTICALS

Hours/week/batch :2 hrs

Max Marks :50

Exam duration :3 hrs

Min Pass Marks : 18

1. Preparation of Creative Albums, picture Books and Children's Literature for Early Childhood Education.
2. Psychometric test for intelligence
3. Daily, weekly & Monthly Planning for an ECCE centre.
4. Planning &Implementing developmental activities for pre school children & Children with special needs.
5. Visits & Report presentation of
 - Early childhood care and Education Centres
 - Nursery Schools
 - Anganwadi
 - Institutions of Children with special needs.

Distribution of Marks:

1. Preparation of creative Albums, Picture Books and Children's Literature	10
2. Story telling	5
3. Planning of ECCE centre	5
4. Developmental Activities	10
5. Visits & Report presentation	5
6. File & Record	10
7. Viva voce	5
Total	50

References :

1. Grewal, J.S. Early Childhood Education, Foundations & Practice, 1984, National Psychological Corporation Agra.
2. Aggarwal, J.C. : History & Philosophy of Preschool Education in India, 1998, Doba House, New Delhi.

3. Contractor, M. (1984): Creative drama & puppetry in education, Delhi: National Book Trust of India.
4. Currell, D. (1985) : The complete book of puppet Theatre, London : A&C, Black.
5. Kaul, V. Bhatnagar, R. (1992) : Early Childhood education A trainer's handbook, New Delhi.
6. Murlidharan, R. Asthama, S.(1991) : Stimulation activities for young children, New Delhi : NCERT.
7. Swaminathan, M. (1984) : Play activities for young children, New Delhi, UNICEF.
8. Adler, S. Farrar, C. (1983) : A curriculum guide for developing communication skills in preschool child, Illinois Thomas Publications.
9. Buke, E. (1990) : Literature for the young child. Needham delights : Allyn ^ Bacon.
10. Devnes, R. Kohlberg, L. (1987) : Programs of early education, New York:
11. Huck, C. (1974) Children's literature in elementary school, New York : Holt, Rinehart & Winston.
12. Krishna Kumar (1986) : The Child's language & the teacher, New Delhi, UNICEF.
13. Margelin, E. (1982) : Teaching young children at school & home. Mac Millan New York.
14. See Felett, C. (1980) : A curriculum of preschools, Columbus : Charles E. Merrill Publishing Company.
15. Khanna S. (1992) : Khelkhej, Ahmedabad : National Institute of Design.
16. Neumann, E. (1971) : The Elements of play. In D. Sponseller, ed. Play as a learning medium Washington. D.C. NAEYC.
17. Tarapore, F., Kettis, G. Benninger, C. (1993) Childs Right to Play Pune: SNTD College of Home science.
18. Decker, C.A. & Decker, J.R. (1984) : Planning and administering early childhood programs, Columbus, Charles E. Merrill, Unit II
19. Gill, S. (1993) : Child care Programs in India. Changing trends. In Saraswathi, S.S. & Kaur, B. New Delhi, Sage Publication.
20. Kaul, V. (1991) : Early Childhood Education Programme. New Delhi: National Council for Educational Research & Training.
21. Lawton, J.T. (1988) : Introduction to child care and early childhood education London : Scott. Foresman & Company.
22. National Policy on Education (1986) : New Delhi Ministry of Human resource Development.
23. Seefeldt C. (1980) : A curriculum for preschool Columbus Ohio : Bell & Howell.
24. Spodak, Bernard (1972) : Early Childhood Education, Englewood Cliffs, New Jersey : Prentice.
25. Pankajam, G. (1994) : Preschool education, Ambala Cantt : Indian Publication.
26. Kulkarni, S.S. (1988) : Parent Education : Perspectives and approaches Jaipur Rawat Publishers.

27. Tuzard, B. Mortimore, J. & Burchell, B. (1981) : Involving parents in nursery & infant schools, London : Grant Mc Intyre.
28. Mohanty, J & Mohanty, B. Early Childhood Care & Education (ECCE) 1996, Deep & Deep Publication, New Delhi.
29. Singh, B., Preschool Education, 1997 APH Publishing Corporation, New Delhi.
30. Rao, V.K. & Islam S.K. (ed) Early Childhood care & education, 1997, Commn Wealth Publishers, New Delhi.
31. Arni, K & Wolf G. (1999) Child Art with everyday materials, TARA Publishing.

Paper- 13
TEXTILES AND CLOTHING II
Textiles and Laundry Science

Hours/Week: 4 Hour

Max Marks: 100

Duration of Examination: 3hrs

Note: each theory paper is divided to three parts, Part –A, Part-B and Part-C

Part A: (20 marks) is compulsory and contain 10 Questions (20 words each) at least 3 Questions from each Unit.(each question is of 2 mark)

Part B: (20 marks) is compulsory and contain 5 question (50 words each) at least one question from each unit (each question is of 4 mark)

Part C: (60 marks) contains at least 6 questions two from each unit (400 words)(each question is of 20 mark)

Candidate is required to attempt 3 question one from each unit.

Contents :

UNIT I

1. Fabric Construction

a. Weaving

- i. Terms used in weaving
- ii. Loom and its parts
- iii. Types of Weaves– Construction, properties & Usage – plain, twill, satin and sateen.
- iv. Introduction to complex weaves – double cloth weave,pile. Leno, colour and weave effect.

b. Knitting Technology

c. Blends: Definition, properties and stages of blending

d. Felting:Properties and stages of felting

UNIT II

2. Fabrics Finishes

a. Introduction and need

- b. Preparatory processes – Singeing, desizing, scouring bleaching, heat setting, tentering, embossing, acid and basic finish
 - c. Routine Finishes – beating, calendering, carbonization, mercerization, sizing, softening, anti shrink, weighting, flocking
 - d. Special purpose finishes – flame retardant, water repellent, anti – static, moth proofing
- 3. Dyeing and printing**
- a. Theory of dyeing
 - b. Classification of dyes
 - c. Stages of dyeing, equipment used, advantages and limitations
- 4. Printing**
- a. Dyeing Vs Printing
 - b. Styles of printing: direct, resist and discharge
 - c. Methods of printing

UNIT III

5. Laundry Science

- a. Introduction
 - i. Classification and Introduction to laundry process
(1) Wet and (2) Dry Cleaning
 - ii. Materials and equipments in laundry
 - iii. Water – Hard and soft water – Temporary and permanent hardness, Problem caused by hard water, Methods of softening Water for laundry process
 - iv. Soap and detergents – Classification, chemical nature, manufacturing, properties, and their cleaning action

6. Laundering aids

- a. Bleaches, blues, stiffening agents, solvents and absorbents, their types, methods of preparation and uses.
- b. Stain removal – types and methods
- c. Care and storage of laundered clothes

PRACTICALS

Duration of examination – 3 hours

Max marks 50

Hours/week: 2 hrs

Min Pass Marks 18

1. Identification of weaves and their design, interpretation on graph.
2. Evaluation of colour fastness.
3. Preparation of samples of tie and dye, batik and printing techniques.
4. Preparation of starches by various stiffening agents and their uses.
5. Removal of stains.

6. Introduction to computer aided designing for weaving softwares.
7. Visit to texting mills, mueseums and garment and factories

Distribution of Marks:

1. Record & File	10 marks
2. Identification of weaves	10 marks
3. Tie & Dye / block Printing / Batik (any one)	10 marks
4. Stain removal (2)	10marks
5. Viva voce	10 marks

Total	50 Marks
-------	----------

References

1. Joseph Marjory L: Introductory Textile Science Holt, Tichard and Winston, N. York
2. Wintage, Isabel B. : Textile fabrics and Their Selection Prentic Hall, Inc., Englewood Cliffs, N. Jersy
3. Joseph Marjory L: Essentials of Textiles Hold, Rinehart and Winston, New York
4. Hess, Katherinc Paddock: Textiles Fabrics and their uses Oxford and IBH –Publishng co. New delhi
5. Corbman Bernard: Textile fiber to Fabric: Mcgraw Hill book Company New York
6. Hollen Norma, Saddle Jane, Angford Anna – Textiles; Macmillan Publishing Co. Inc. N. York
7. Deulkar Durga : Household Textiles and Laundry Work : Atma Ram & Sons, N. Delhi
8. Dhatyagi; Sushella : Fundamentale of Textiles and their Care Oriented Longmans , Bombay
9. Smith Betty F. Block Ira- Textiles in Perspective – Prentice Hall INC Englewoodeliffe Jersey.