

B.Sc. Home Science Syllabus 2018

Semester II Group I Paper 3 Nutritional Biochemistry

Unit 1

Introduction to Biochemistry

Definition, objectives, scope and inter-relationship between biochemistry and other biological sciences

Carbohydrates

- Definitions, classification, structure and general properties of:
Monosaccharides-glucose, fructose, galactose, ribose
Disaccharides . maltose, lactose, sucrose
Polysaccharides . dextrin, starch, glycogen

Unit 2

Lipids

- Definitions and classification of lipids
- Types and properties of fatty acids
- Composition and properties of fats

Proteins

- Definition, classification, elementary knowledge of structure of proteins
- Definition, classification structure and properties of amino acids
- Essential and non-essential amino acids

Unit 3

Introduction to Enzymes, Classification and properties of Enzymes, Co-enzymes, Enzyme Inhibition

Digestion and absorption of Carbohydrates , Proteins , Fats
Water, electrolyte, acid base balance, buffer

Unit 4

Vitamins - Structure and biochemical role:

- Fat soluble vitamins . A, D, E, K
- Water soluble vitamins . B₁, B₂, niacin, pyridoxine, folic acid, B₁₂ and C

Minerals: Biological role and occurrence of inorganic elements . iron, calcium, phosphorous, iodine, selenium and zinc

RECOMMENDED READINGS

Lehninger A L, Nelson D L and Cox M M (2009). Principles of Biochemistry, 6th Ed. CBS Publishers and Distributors.

Murray R.K, Granner D K, Mayes P A and Rodwell V W (2009). Harper's Biochemistry, 28th Ed, Lange Medical Book.

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Semester II Group I Practical

- Carbohydrates: Qualitative analysis of sugars- reducing/non reducing, aldose / ketos, pentose/ hexose, monosaccharide, disaccharides and polysaccharides.
- Fats: Qualitative analysis of saturates and unsaturated fats
- Proteins: Qualitative analysis of aromatic/ no aromatic, sulphur containing amino acids, peptide bonds
- Estimation of casein in milk
- Vitamins: Estimation of ascorbic acid content by titrimetric method
- pH : measurement of pH
- Measurement of blood pressure and pulse rate
- Blood group identification and estimation of haemoglobin

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Semester II Group II Paper 3 LIFE SPAN DEVELOPMENT I

Unit-I

Physical Development across life span

1. The new born physical appearance, size, weight, bodily proportion, sensory capacities i.e. hearing, vision, touch etc.
2. Changes in size, shape, bone and brain as it continues through infancy , preschool, childhood, adolescent growth spurt(primary and secondary sexual characteristics, Plateau in adulthood, decreasing physical abilities in old age

Unit-II

Motor Development

- a. Reflexes in infancy, major milestones of infancy, pre-school years, middle and late childhood, adolescent plateau in adulthood, declining co-ordination in adulthood and age
- b. Factors affecting Physical and motor development

Unit-III

Social Development:

- a) Social development and socialization as an important part of the process becoming human
- b) Social milestones; beginning with the emergence of the social smiles, attachments, separation anxiety acquiring sex roles in childhood, social development at puberty, induction into occupational roles by adulthood, social isolation and consequences in the late adulthood and in the elderly
- c) Pattern and roles of child interaction, interaction with siblings and peers; social and cultural interaction through infancy to old age
- d) Factors affecting social development

Unit-IV

Emotional Development:

- i) Concepts of emotions and emotional development
- ii) Basic emotional reactions, joy, fear, jealousy, anger, sadness, aggression
- iii) Emotional Development through infancy, childhood, adolescence, stability of emotions in adulthood and old age.
- iv) Hazards in emotional Development

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Semester II Group II Practical-Human Development

1. Interviewing mothers regarding pregnancy and prenatal care
2. Observing children in different situations and recording the observations
3. Assessment of social behavior
4. Assessment of emotional maturity
5. prepare play materials and teaching aids for children
6. Plan and develop activities to facilitate development in different domains

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Semester II Group III Paper 3 Art & Design

Unit-I

1. Introduction to foundation of art:
 - a) Design-Definition and types
Structural and decorative
 - b) Elements of Design-
 - i) Line
 - ii) Form
 - iii) Texture
 - iv) Space
 - v) Shape
 - vi) Light
 - vii) Colours-classification, dimensions, colour schemes and effects

Unit-II

2. Principles of design-Definition and their characteristics:
 - a) Balance
 - b) Harmony
 - c) Proportion
 - d) Rhythm
 - e) Emphasis

Unit-III

3. Indian, regional, traditional arts -
 - i) Floor Decoration
 - ii) Home Decoration
4. Appreciation of art:
 - i) In terms of Principles of art and design
 - ii) In terms of composition and aesthetic appeal

Unit-IV

5. Indian art:
 - a) Regional
 - b) Traditional
 - c) Contemporary
6. Flower Arrangement

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Semester II Group III Practical

1. Preparation of colour wheel and colour schemes
2. Flower arrangements: application of design principles innovation of new styles
3. Floor Decoration
4. Application of design principles in innovative household articles
5. Planning of household budget of different income levels