

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

B.A. II (Home-Economics) Semester-III

Nutrition and Dietetics

3T1

Total marks-100

Theory -40Marks

Theory Internal-10Marks

Practical -40 marks

Practical Internal-10 marks

Time:2Hrs(Theory)

practical: 3 Hrs

Objectives-

- To understand the concept of an adequate diet, functions of food and the role of various nutrients, their requirements and the effect of deficiency and excess.
- To learn about the structure, composition, Nutritional contribution and selection of different food stuff.
- To develop and ability to improve the nutritional quality of food.
- To familiarize students with the role of nutritional quality of food.
- To develop marketing and entrepreneurship skills to enhanced employability.

Course Outcomes

C01	Given the knowledge of Nutritious diet students will be able to provide nutritious diet tiffin services. .
C02	Given the information of Minerals and Vitamins students will able to produce and sale nutrient rich food .
C03	Given the knowledge of Energy spent for different activities students will able to give appropriate food for fitness centers .
C04	Given knowledge of sports nutrition students will able to assist school nutritionist in sports meal planning .
C05	Given the knowledge of role of micronutrients in maintenance of good health, students will be able to assist NGOs working for child and mother care.
C06	Given the knowledge of BMI calculation students will be able to calculate energy requirements for malnutrition programmes.
C07	Given the knowledge of special Nutritional demand for sports persons students will able to prepare and sale health drinks and special food for sports persons.

Course Content

UNIT-I

a) **Introduction of Nutrition** - Definition of Health, Nutrition, Dietetics, Nutritional status, optimum Nutrition and Nutrients. Definition of food and functions of food. Dimensions of health (Physical, Psychological, Emotional, Spiritual).

z-Carbohydrates, Fats, Proteins- Classification, Functions, Sources, Recommended dietary allowances, Deficiency and excess.

UNIT-II

Micro Nutrients-

a) Minerals –

1) Calcium, 2) Phosphorus, 3) Iron, 4) Sodium, 5) Magnesium,
6) Iodine Functions, Sources, Absorption, Recommended dietary allowances, Deficiency.

b) Vitamins-

Fat soluble – Vitamin A, D, E, K.

Water Soluble- Vitamin C, Vitamin B Complex, (B1, B2, B3, B6, B12, Folic acid), Properties, Function Sources, Recommended dietary allowances, Absorption, Deficiency.

Water- Function, Sources, Recommended dietary allowances, Deficiency.

UNIT-III

a) **Fibre** – composition, Classification, Functions, Sources, Recommended dietary allowances, Deficiency, Excess.

b) **Energy (Calorie)** –Definition of calorie, Factors affecting energy requirement, Fuel value of foods. Calorimeter- Bomb, Benedict Oxy, Atwater Rosa Benedict.

Basal Metabolic Index (BMI), Calorie requirement for sedentary, moderate and heavy workers Men and Women.

Antioxidants – Sources and importance.

UNIT-IV

a) **Basic Food Groups**-Sources and importance of Cereals, Pulses, oilseeds, Vegetables & Fruits, Milk and milk products, sugar and jiggery, spices, beverages, eggs, fish, meat.

b) Methods of Cooking-

1. Meaning of cooking of food, objectives of cooking food,

Methods of cooking - Boiling, steaming, Pressure cooking, shallow frying, deep frying, Roasting, Baking, Grilling, Micro wave, solar and informatics. Advantages and disadvantages of cooking methods.

2. **Sports Nutrition**- Meaning of sports Nutrition, Objectives of Nutritional management, sports supplements, nutritional allowances given by NIN.

Practical:3P1

1.Preparation of following recipes & Calculation of Calories and Proteins for prepared dishes.

Snacks: i) DahiWada, ii) Dhokla, iii) Chole Bhature, iv) PudachiVadi/ Bhajiwada.

Sweets: i)Rava Besan Burfi, ii) Gulab Jamun, iii) Lavang Latika, iv) Til Papdi /
Roasted split channa (Dalia) laddu with jaggery.

Baked items:

1) Ata Biscuits ,2) cupcakes / Eggless cake

Traditional Welcome health Drink :- Any Two

1) Solkadhi, 2) Lemon mint juice (sarbat) , 3) kokam juice (Sarbat)
4) Kairi pudina juice (panha)

Dry Chutney Powder :- Any Two

1) Javas, Til, 2) Kadhypatta, 3) Shengdana, 4) Udad dal

Activities for Practical Internal (PI)

1. Celebration of Nutrition Week/World Food Day/Any nutritional awareness programme and report writing of the above programme. (Any one).
2. Organization of Canteen activity/ Entrepreneurship activity/
Earn while Learn activity for ex. Papad, Masala, pickle, metkut , supari , Amla Candy (Any Two).

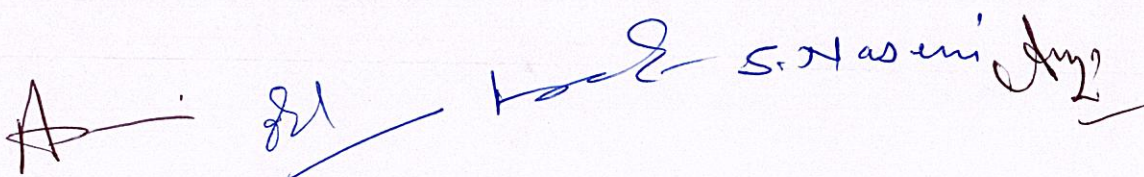
**Distribution of Marks for Practical Examination
(Total Marks-40)**

1.	Preparation and presentation of Two Dishes	-	(15Marks.)
2.	Calculation of Calories and Proteins of the prepared dishes	-	(10Marks.)
3.	Viva based on practical	-	(05Marks)
4.	Menu Card	-	(05Marks.)
5.	Record Book	-	(05Marks)

Practical Internal Assessment on Activities

(Total-10Marks)

1. Celebration of Nutrition Week/World Food Day/Any nutritional awareness programme and report writing of the above programme. (Any one). - (05Marks.)
2. Organization of Canteen activity/ Entrepreneurship activity/ Earn while Learn activity for ex. Papad, Masala, pickle, metkut , supari , Amla Candy (Any Two). - (05Marks)



Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

B.A. II (Home –Economics) Semester-IV

Nutrition and Dietetics

4T1

Total Marks –100

Theory -40Marks

Theory Internal-10Marks

Practical -40 marks

Practical Internal -10 marks

Time:2Hrs(Theory)

3 Hrs (Practical)

Course Outcomes

CO1	Given knowledge of Principles of diet therapy, students will be able to prepare and sale recipe book for special dishes required in therapeutic diet.
CO2	Given knowledge of food preservation, students will be able to launch new recipe booklets and video's on You tube channel .
CO3	Given knowledge of malnutrition, students will be able to formulate small self -help group and will be able to take contract for mid -day meals in school.
CO4	Given practical knowledge of bakery products students will be able to establish bakery centers.
CO5	Given knowledge of food spoilage, students, will be able to prepare and supply hygienic & quality food products.

Course Content

UNIT-I

- a) **Balanced Diet** -Definition, Factors affecting balance diet, Different Nutrients in balanced diet, Principles of Meal Planning.
- b) **Nutrition through Life Cycle**- 1.Pregnancy, 2. Lactation. 3. Infancy, 4. Pre-School, 5.School going, 6. Adolescence, 7. Adulthood, 8. Old age.

UNIT-II

- a) **Principles of Diet Therapy.** a) Modification of Normal diet for Therapeutic purposes.
- b) Types of Diet c) Nutritional Management in common diseases. i) Diarrhea ii) Diabetes Mellitus iii) Constipation iv) Anemia v) Sickle Cell Anemia.
- b) **Nutrition Education:** Meaning and Definition, Objectives, Methods of Nutrition Education.

UNIT-III

- a) **Food spoilage, Food Poisoning** – Definition, various types of food poisoning and Remedies.
- b) **Food Preservation** – Definition and importance of food preservation, Methods of food preservation - Dehydration, with salt, Sugar, Oil and spices, by control of temperature, Chemical Preservation

Food and Adulteration – Definition, Reasons behind food adulteration, effects of food adulteration, detection of food Adulteration, Standards, Remedies to tackle food adulteration, Laws regarding food adulteration.

UNIT- IV

a) **Improving Nutritional Quality of foods**-Germination, Fermentation, Supplementation, Substitution, Fortification and enrichment.

b) **Malnutrition in India**-Definition of Malnutrition, over nutrition and under nutrition. Nutritional problems in India, Causes and remedies of malnutrition, Different agencies to combat malnutrition - FAO,CARE,NIN.

Practical 4P1

1. *Preparation of following recipes. Calculation of Calories and Proteins of prepared dishes.*

- **Types of Rice (Any Two)** Vegetable Pulav / Curd Rice / Lemon Rice.
- **Types of Sweets - (Any Two)**
i) Khowa Poli, ii)Karanji, iii)Sattu Laddoo, iv)GajarHalwa
- **Types of Indian Pizza (Any one)**- Vegetable Thalipith / Uttapam (Anyone)
- **Starters (Any two) i)** Hara Bhara Kabab / Paneer Tikka / Cutlets / Appe
- **Party Menu**– Pav Bhaji, Ragda Patice.

Internal

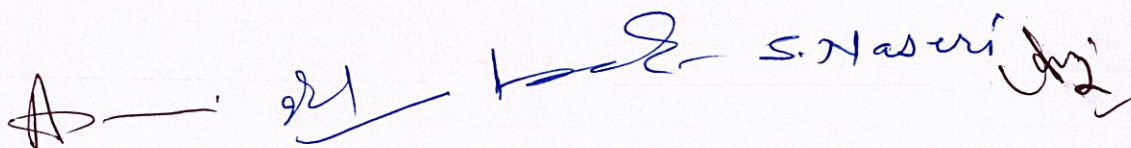
1. Exhibition of students made products .
2. Report writing with costing of above activity.

Distribution of marks Practical Examination (Total Marks-40)

- | | |
|--|---------------|
| 1. Preparation and presentation of Two Dishes | - (15Marks.) |
| 2.Calculation of Calories, Proteins of the prepared dishes | - (10Marks.) |
| 3.Viva based on practical | - (05 Marks) |
| 4.Menu Card | - (05Marks.) |
| 5.Record Book | - (05 Marks.) |

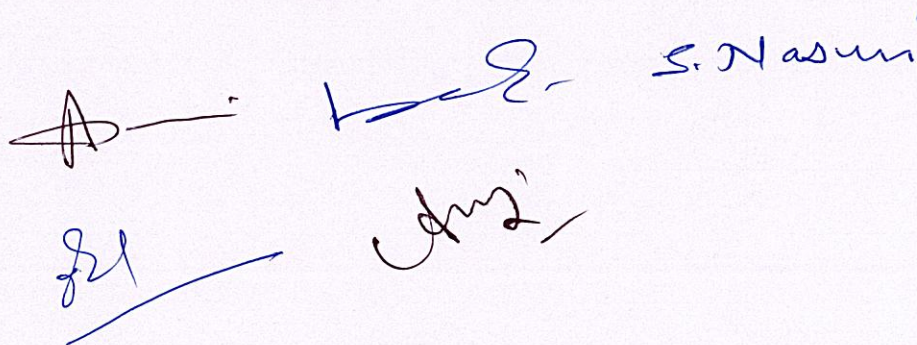
Internal Assessment on Activities (Total-10Marks)

1. Exhibition of students made products . (05 marks).
2. Report writing with costing of above activity. (05 marks)

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Books Recommended

1. Sherman and Longford: Essentials of Nutrition.
2. Dr.Patwardhan: Nutrition in India
3. W.E Aykoroyd: The Nutritive value of Indian Food and the Planning of Satisfactory Diet. 4. Maxinre, E.Mc. Divit and S.R.Mudambi: Human Nutrition principles and application in India.
5. R.L. Brijlani: Eating Scientifically.
6. Robinson Proudifit : Normal and Therapeutic Nutrition.
7. S.W.Swaminathan : Essential of Nutrition, part –I and II.
8. Poshan Ani Arogya: Dr.SandipaSurjuse, Vishva Publishers, Nagpur.
9. Poshanani Aharshastra-Dr. Anuradha Nisal and Dr.Prabha Chinchkhede, G. C. Publishers, Nagpur.
10. Poshan ani Aaharshstra :Dr. Mina Kalele, Pimpalapure Publishers, Nagpur.

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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

B.A. III (Home –Economics)

Semester-V

Child- Development 5T1

Theory - 40 Marks

Theory Internal - 10 Marks

Practical -40 marks

Practical Internal -10 marks

Time: 2 Hrs (Theory)

3 Hrs (Practical)

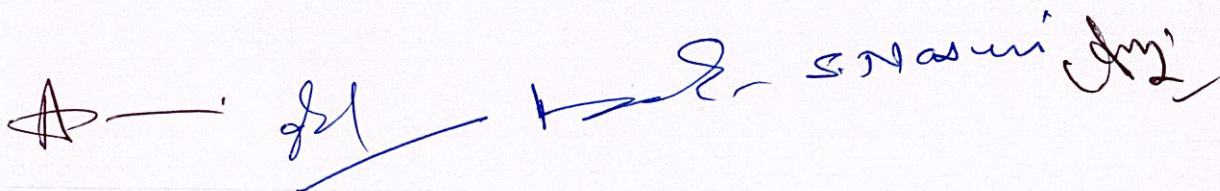
Course Content

Objectives

- To introduce the field of Child-Development. It's concept ,scope, dimensions and interrelations.
- To sensitize the students to interventions in the field of child- development.
- To understand the biological and physiological foundation of development.
- To appreciate sequential ages of development during child- hood.
- To sensitize students about childhood behavioural problems.
- To understand and appreciate the importance of parents-child development.
- To develop in student's creative ability related to children-leading to enhanced employability.

Course Outcome

CO1	Given the knowledge of growth and development Students will be able to provide counselling about growth and development.
CO2	Given the detail about prenatal development students will be able to work in a Anganwadi .
CO3	Given the detail about neonatal development students will be able to work with NGO's working in the field of women and child development field.
CO4	Given the detail information about supplementary food preparation ,students will be able to start their own supplementary food production.
CO5	Given the knowledge of stitching of baby products ,students will be able to establish their own start up in baby production .

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UNIT-I

- a) **An overview of the field of child-development.** Meaning, Definition, importance and scope of child- development.
- b) **Orientation to growth and development.**
1. Definition of growth and development.
 2. Stages of development.
 3. General Principals of growth and development.
 4. Constraints and facilitators in growth and development.
 5. Influence of heredity and environment on growth and development.
 6. Difference between growth and development.
 7. Factors affecting growth and development.

UNIT-II

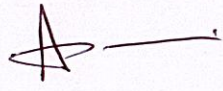
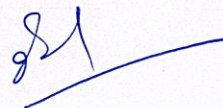
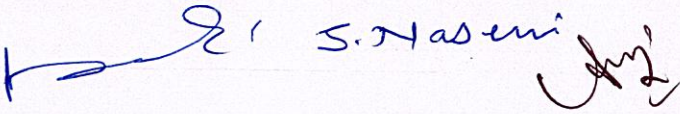
- a)**Genetic Inheritance**-Fertilization, Number of Chromosomes, sex determination, Genotype and Phenotype.
- **Prenatal Development**- Emphasis on major developments during the three stages of inter-uterine development.
- b)**Factors affecting prenatal development**- Age of mother, Illness, diet and nutrition, stress and emotional strains, environmental hazards etc. Misconception of diet intake during pregnancy and its effect on health, Recommendations.
- **Twins**- Fraternal and Identical.

UNIT-III

- a) **Post- Natal Period-Neonatal Period** -(From birth to two weeks)- Definition, Characteristics, Factors affecting post natal period. Hazards of Neonatal period-Physical hazards, Psychological hazards.
- b)**Infancy and Babyhood (2 weeks to 2 years)**- Definition, Characteristics of babyhood, Physical growth and Motor development, Speech development – Four Pre speech Forms-Crying, Cooing, Babbling ,Gestures.
- Development of senses – Visual, Auditory, Smell, Taste, Touch, Reflexes during neonatal Period-Rooting reflex, Sucking reflex, Blink Reflex, Moro Reflex, Bobinski Reflex, Tonic neck Reflex, Darwian Reflex etc. Hazards and Happiness.

UNIT-IV

- a) Immunization and its importance. Importance of Supplementary food.
- b) Agencies in the field of child development- Mahila evam Balkalyan vibhag, ICDS, UNICEF, Role of NGO's.

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Practical 5P1

A) Cooking- Diet planning and preparation of following recipes.

For Pregnant Women-

1. Mix vegetable Paratha and Curd raita with vegetables
2. Vegetable upma/ Vegetable dalia (Soji)
3. Mix vegetable Tikki with chutney
4. Mix Sprouted usal .

For Lactating Women-

1. Aliv Kheer
2. Mix dal dhirde
3. Palak paneer rice
4. Gum Laddo
5. Rajgira and shinghada ladu

B) Stitching (6 months- 1 year)

a) Drafting ,cutting and stitching of the following garments.

1. Dupte from old cotton clothes /Cotton cloth baby bag .
2. Baby Nappy (Langot).(Drafting of 3 nappies and stitching of any one pattern).

Internal Assessment Activities

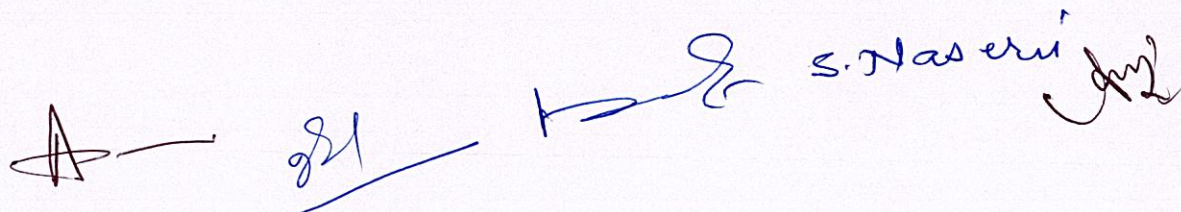
1. Preparation of supplementary food for 0-1 year- Cerelac/Nachni product /Any as per nutrients.
2. Organize guest lecture on , 'Breast feeding and its important ' and report writing of the same.

Distribution of Marks

Practical Examination	-	(40 Marks)
1. Stitching (Any one)	-	(15 Marks)
2. Preparation of dish (Any Two)	-	(15 Marks)
3. Viva Based on Practical	-	(05 Marks)
4. Record book	-	(05 marks)

Internal Assessment - (10 Marks)

1. Preparation of supplementary food for 0-1 year. Cerelac/ Nachani Product / any as per nutrients - (05 Marks)
2. Organization of guest lecture on , 'Breast feeding and its important ' and report writing of the same. (05 Marks).

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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur.

B.A. III (Home –Economics)

Semester-VI

Child- Development 6T1

Total marks-100

Theory - 40 Marks

Theory Internal - 10 Marks

Practical -40 marks

Practical Internal -10 marks

Time: 2 Hrs.(Theory)

Practical -3 Hrs.

Course Outcome

CO1	Given the information about Early Childhood, students will be able to work in the field of play school.
CO2	Given the detail about speech development and speech defects among children students will be able to work with speech therapists.
CO3	Given the detail about social development students will be able to work with child development Centre.
CO4	Given the detail information about behavioural problems among children and parent child relationship ,students will be able to work with Child counsellor in a schools .

Course Content

UNIT –I

a)Early Childhood- (2-6 years)

Characteristics, developmental tasks. • Physical development-Definition,

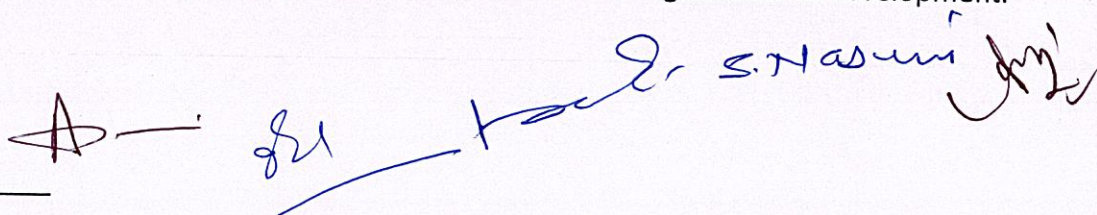
1. Change in size- change in height, weight, development of bones, Teeth etc.

2. Change in body proportion

3. Growth of internal organs, factors affecting physical development.

b) Motor Development- Meaning, Skills of early childhood-Hand skills and leg skills. Handedness, Essentials of development of skills, factors affecting motor development.

Emotional development-Definition. Types of emotions, importance of emotions, Emotions during early childhood-Positive emotions- Happiness, Love and Affection, Curiosity. Negative emotions- Fear, Anger, Jealousy, Anxiety. Characteristics of emotions, factors affecting emotional development.



UNIT-II

a)Speech Development-Definition, Importance of speech. Steps of speech development during early childhood- 1)comprehension, 2) Pronunciation, 3) Vocabulary building, 4) Sentence formation.

Speech defects- 1. Lipping 2. Cluttering 3. Stuttering 4. Slurring. Remedies of speech defects. Factors affecting speech development.

b) Intellectual development- Definition, Classification of intelligence, Measurement of intelligence, Intelligence quotient (I.Q.), Factors affecting intellectual development.

Moral development- Definition, Methods of learning of Moral development , Levels of moral development during early childhood, Factors affecting moral development.

UNIT-III

a)Social Development-Definition, Companions during early childhood 1. Associates, 2. Playmates, 3. Friends, 4. Imaginary friends. Forms of social behaviour. Factors affecting social development.

b)Play- Importance of play(Values of play), characteristics of play, Stages of play, Types of play-Free spontaneous play, Dramatic or imaginary play, Constructive play.

UNIT-IV

a) Childhood behavioural problems: Common causes of behavioural problems.

Types of Behavioural problems, its causes and remedies-1. Lying, 2. Stealing, 3. Temper Tantrums, 4. Nail biting, 5. Thumb Sucking.

Parent-child relationship- Importance, Need for desirable Child rearing practices, Parental Challenges –Attraction toward junk food, Television watching and its effects on children.

b) Discipline- Definition, Objectives, Need and importance, Types of discipline 1. Authoritarian discipline 2. Democratic discipline 3. Permissive discipline. Advantages and disadvantages .Role of Reward and Punishment in discipline.

Practical: 6P1

A) Diet planning and preparation of following recipes.

• **For Babyhood (6 months -2 years)**

1. Soft Khichadi, 2. Tomato soup/Mix vegetable clear soup, 3. Nachani/Badam/ Rava Kheer

• **For Pre-school children(2-6 years)**

1. Jawar Ambil 2. Groundnut Chikki/Groundnut laddoo 3. Idli Chutney/Sambar 4. Steamed sprouted Chat 5. Gopal Kala .6. Roti roll with vegetables.

B) Drafting , cutting and Stitching (For 1-2 years)

1. Baby frock
2. Baby feeder

OR

B) Hand Knitting

1. Bonnet
2. Sweater

Internal Activities:

1. Anganwadi visit and survey .Report writing and presentation in the class.
2. Preparation of Teaching aids for preschool Children: Finger Puppets, Masks, flash cards, Charts .

Distribution of Marks Practical Examination – (40 Marks)

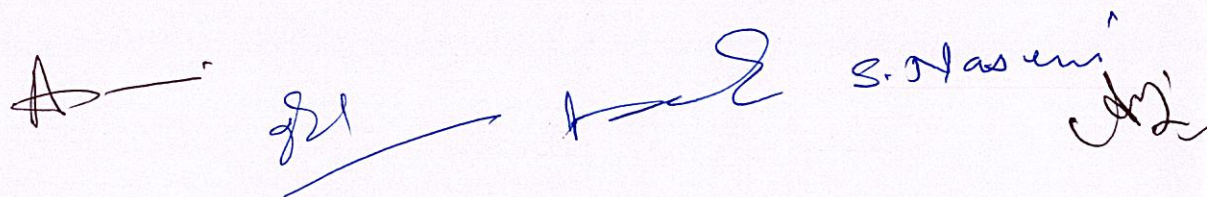
1. Drafting, cutting and Stitching of garment /Hand Knitting (Any one) - (15 Marks)
2. Preparation of dish (Any Two) & Menu card - (15 Marks)
3. Viva Based on Practical (05 Marks)
4. Record book - (05 marks)

Internals Assessment (10 Marks)

1. Organization of guest Lecture on health awareness of women & children and report writing of the same- (05 Marks)
2. Preparation of Teaching aids for preschool Children: Finger Puppets, Masks, flash cards, Charts, (any one) (05 Marks)

Books Recommended

1. Speaking of child care, Everything you wanted to know (Gupta (1991) 2 nd Ed. New Delhi, Sterling.
2. Child rearing and psycho-social development-New Delhi: Lidhop M (1987) Ashish Publication.
3. Family interaction: Bahr S.J. (1989) N.V. Macmilan.
4. Human Development: Rice F.P. (1995) New Jersey : Prentice Hill.
5. Moral Values in child development- Dutt,S. (1998) New Delhi-Anmol.
6. Child-Development: Elizabeth Hurlock.
7. Child growth and development: Elizabeth Hurlock.
8. Child- Development: Dr .Neelima Sinha and Dr. Vijayanti Deshpande, G.C. Publisher, Nagpur.

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