



NUTRITION INTERVENTION PROGRAMMES AND POLICIES

Nutrition is a major factor in bringing out the maximum potential that one is endowed both physically and mentally. Widespread malnutrition is largely a result of dietary inadequacy and unhealthy lifestyles. The great advantages of looking at malnutrition as a problem in human ecology is that it allows for variety of approaches towards its prevention.

In this lesson, the students will be able to know about:

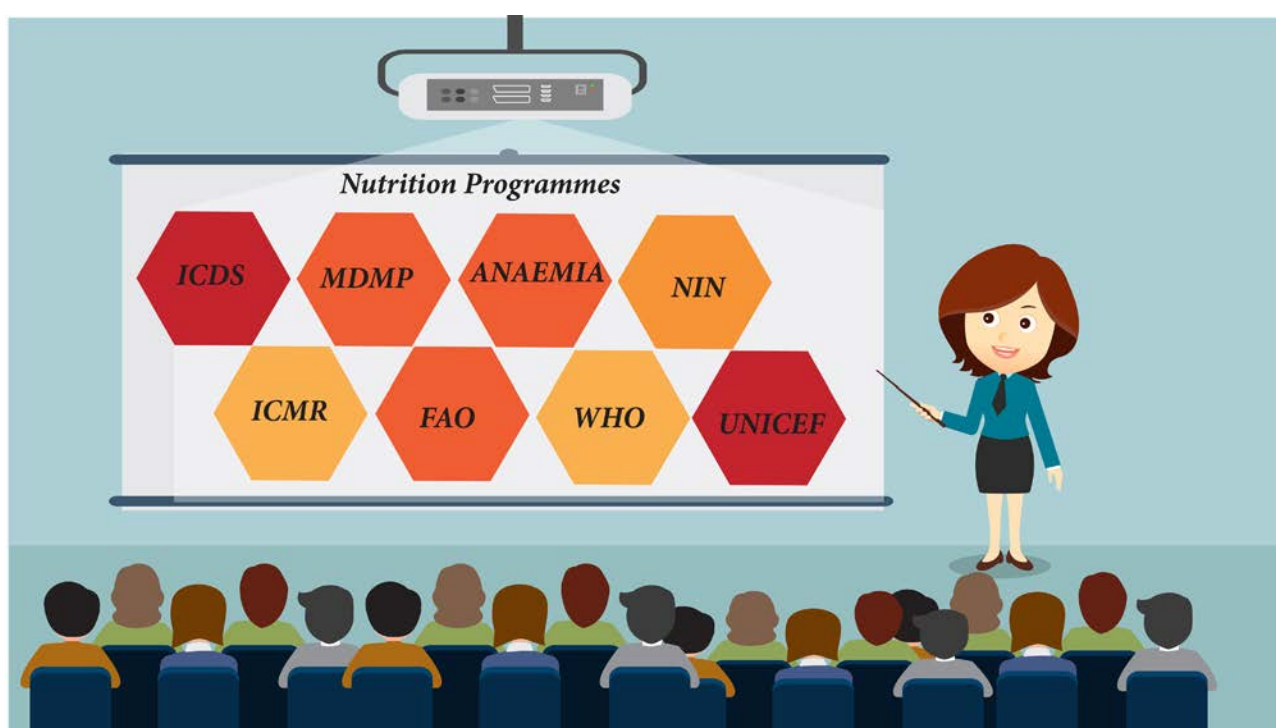
- the ongoing intervention programmes by the Government to overcome malnutrition.

- National and International agencies that fight against malnutrition.
- the various components of noon meal programmes which helps in the overall development of children.

12.1. Nutrition intervention programmes

12.1.1. Integrated Child Development Services (ICDS)

ICDS was initiated in 1975 with the twin objective of ensuring nutrition of preschool children through



Nutrition Intervention Programmes

supplementary feeding and psychosocial development through early stimulation and education. The objectives also include supplementary feeding for pregnant and lactating women and nutrition education to ensure better child care and nutrition.

The nutrition components of ICDS aims to provide the following services:


- nutrition education to mothers for improving dietary intake and dietary diversity.
- nutrition education regarding appropriate infant and young child feeding practices.
- growth monitoring and detection of growth faltering.

- assist in providing massive doses of vitamin A, ORS and iron tablets.
- food supplementation to preschool children between the age of six months and six years, pregnant and lactating mothers and adolescent girls.

The Anganwadi workers are expected to survey all families in the community and identify pregnant, lactating women and preschool children, monitor the growth of children and provide food supplement to the three groups for 300 days in a year. ICDS guidelines specify that monthly weighing of children should be done in the crucial 0-24 months age group.

Mother and Child Protection card (MCP card) was introduced for

Integrated Child Development Services
National Rural Health Mission



Mother and Child Protection Card

Photograph of Mother & Child

Family Identification

Mother's Name _____ Age _____

Father's Name _____

Address _____

Mother's Education: illiterate/primary/middle/high school/graduate

Pregnancy Record

Mother's ID No. _____

Date of the last menstrual period _____ / ____ / ____

Expected date of delivery _____ / ____ / ____

No. of pregnancies/ previous live births _____ / ____

Last delivery conducted at: Institution ☐ Home ☐

Current delivery: Institution ☐ Home ☐

JSY Registration No. _____

JSY payment Amount _____ Date _____ / ____ / ____

Birth Record

Child's Name _____

Date of Birth _____ / ____ / ____ Birth Weight _____ kgs _____ gms

Girl ☐ Boy ☐ Birth Registration No: _____

Institutional Identification

AWW _____ AWC/Block _____

ASHA _____ ANM _____

SHC / Clinic _____

PHC / Town _____ Hospital / FRU _____

Contact Nos. ANM _____ Hospital _____

Transport Arrangement _____

AWC Reg. No. _____ Date _____ Sub-centre Reg. No. _____ Date _____

Referral _____

Ministry of Women & Child Development, Government of India
Ministry of Health and Family Welfare, Government of India

Regular checkup is essential during pregnancy

Months: 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Registration Register with the health centre in the first trimester.

ANC Have at least 3 antenatal checkups, after registration

BP, Blood & Urine Have blood pressure (BP) checked and blood and urine examined at each visit.

Weight Have weight checkup at each visit. Gain at least 10-12 kg. during pregnancy. Gain at least 1 kg every mth. during the last 6 mths. of pregnancy.

T.T. Injection Take two T.T. injections. T.T.1 when pregnancy is confirmed and T.T.2 after 1 month. (Fill in the date)

Iron Tablets Take one tablet of iron and folic acid a day for at least 3 months. Take at least 100 tablets. (Fill in quantity and date issued)

Care During Pregnancy

Consume a variety of foods
Consume more food – around 1/4th times extra than the normal diet
Consume SNP from the AWC regularly

Take at least two hours of rest during the day. In addition to 8 hours of rest at night.
Use only adequately iodised salt

Ensure nutrition counselling at every ANC

ANTENATAL CARE

OBSTETRIC COMPLICATION IN PREVIOUS PREGNANCY
(Please tick (✓) the relevant history)

A. APH ☐ B. Eclampsia ☐ C. PIH ☐
D. Anaemia ☐ E. Obstructed labor ☐ F. PPH ☐
G. LSCS ☐ H. Congenital anomaly in baby ☐ I. Others ☐

PAST HISTORY
(Please tick (✓) the box of the appropriate response/s)

A. Tuberculosis ☐ B. Hypertension ☐ C. Heart Disease ☐
D. Diabetes ☐ E. Asthma ☐ F. Others ☐

EXAMINATION

General Condition	Heart	Lungs	Breasts

ANTENATAL VISITS

	1	2	3	4
Date				
Any complaints				
POG (Weeks)				
Weight (Kg)				
Pulse rate				
Blood pressure				
Pallor				
Oedema				
Jaundice				

ABDOMINAL EXAMINATION

	1	2	3	4
Fundal height Weeks/cm				
Lie/Presentation				
Fetal movements	Normal/Reduced/Absent	Normal/Reduced/Absent	Normal/Reduced/Absent	Normal/Reduced/Absent
Fetal heart rate per minute				
P/V if done				

ESSENTIAL INVESTIGATIONS

Hemoglobin			
Urine albumin			
Urine sugar			
Signature of ANM			

Blood Group & Rh Typing: _____ Date _____ / ____ / ____

OPTIONAL INVESTIGATIONS

1. Urine pregnancy test		Date	____ / ____ / ____
2. Hbs Ag.		Date	____ / ____ / ____
3. Blood sugar.		Date	____ / ____ / ____

Participate in monthly fixed village Mother Child Health & Nutrition Day



Fig 12.1: Mother and Child Protection card (MCP card)

functionaries of National Rural Health Mission (NRHM) and ICDS from 1st April 2010 to progressively replace the earlier **JacchhaBacchha card**. The new MCP card is increasingly viewed as a critical tool for upkeeping maternal and child health in the updated coverage of both ICDS and NRHM.

12.1.2 Midday meal programme (MDMP)

The midday meal programme (MDMP) is also known as school lunch programme. This programme has been in operation since 1961 throughout the country. In formulating midday meals for school children, the following broad principles should be kept in mind:

- The meal should be a supplement and not a substitute to the home diet.
- The meal should supply atleast one third of the total energy requirement and half of the protein need.
- Cost of the meal should be reasonably low.
- Meal should be such that it can be prepared easily in schools. No complicated cooking process should be involved.
- As far as possible, locally available foods should be used. This will reduce the cost of the meal.
- Meal should be frequently changed to avoid monotony.

Objectives of the school feeding programme are to :

- provide food for undernourished children and to improve the nutritional status and monitor it.



Fig 12.2: Mid-Day meal programme (MDMP)



ACTIVITY

1. Download the MCP card from the website icds_wcd.nic.in. Use the card to find out the health and nutritional status of pregnant mothers, infants and preschool children in your neighbourhood.
2. Case study: 3 year old Ram weighs 13 kgs and his height is 90 cms. Find out his nutritional status in the ICDS card.
3. Visit an Anganwadi centre near your house and find out what are the benefits offered to the beneficiaries.
 - (i) Food only: Yes/No
 - (ii) Education only: Yes/No
 - (iii) Food and Education: Yes/No



- increase school enrolment and attendance of children
- reorient good eating habits.
- incorporate nutrition education into curriculum.
- improve literacy and educational performance of pupils.
- encourage the use of local commodities.
- encourage community participation in the feeding programme.

The Mid-Day Meal Programme for school children comes under the Ministry of Human Development. The Government of India pays 40 percent of the expenditure and 60 percent is borne by the States. It covers all children upto the age of 15 years.

The Mid-Day Meal Programme was introduced in a large scale in 1960's by K.Kamarajar, former chief minister of Tamilnadu. But the first major thrust came in 1st july 1982 when the then chief minister of Tamilnadu DR.M.G.Ramachandran decided to implement the scheme for all children in government schools in primary classes. In this programme, students from classes I to V in Corporation, Government and Government aided schools are given free mid-day meal for 200 days in a year. Under this programme, the Government of India provides 100 grams of rice, 15 grams of dhal, 1 grams of oil and 20 paise worth of vegetables per individual. The meal given are based on a combination of cereals, pulses and leafy vegetables. Eggs are given thrice a week. Such a diet would increase the amount of vitamins and minerals and results

in weight gain and clearance of deficiency symptoms.

What do children eat today in their midday meal :

- Upto 5th standard, 100 grams of rice per child per day
- Upto 10th standard, 150 grams of rice per child per day
- Egg on all working days. Banana alternative for vegetarians.
- First and third week of month, pulav made of black Bengal gram given for protein
- Second and fourth week, green gram sundal
- Fridays, chilli fried potato for carbohydrates
- Use of double fortified salt
- Sweet pongal is served on occasions



ACTIVITY

4. Visit the nearest noon meal centre in your area and find out the following details:
5. How many eggs are given per week for the beneficiaries? What are the benefits of giving eggs to the children?
6. Write the weekly menu given in the noon meal centre in your school.

Mid-Day meal programme has resulted in the following:

- Reduction in severe malnutrition in children.
- Increased enrolment rate at primary level.



- Reduction in drop-out rate at school level.
- Developed attentiveness in them and thereby improved their power of comprehension.
- Improved their performance in examinations.
- Decreased the incidence of various diseases and physical disorders caused by starvation or intake of less nutritious food.
- Enabled parents to attend to their routine bread earning tasks.
- The gender difference in feeding the children reduced at home.
- A favourable attitude in parents in educating the children, specifically female children.

12.1.3. Prevention and control of anaemia

Prevention of anaemia requires approaches that address all the potential causative factors. These include:

1. **Dietary approach:** The following points need to be considered for the promotion of this strategy:
 - Promotion of consumption of pulses, green leafy vegetables, other vegetables which are rich in iron and folic acid and meat products rich in iron particularly for pregnant and lactating mothers and preschool children. Media can also be involved for creation of awareness.
 - Creation of awareness in mothers attending antenatal clinics and immunization sessions in anganwadi centres and crèches about the

prevalence of anaemia, ill effects of anaemia and that it is preventable.

- Addition of iron rich foods to the weaning foods of infants.
- Regular consumption of foods rich in vitamin C to promote iron absorption such as orange, guava, amla, etc.
- Promotion of home gardening to increase the availability of common iron rich foods such as green leafy vegetables.
- Discouraging the consumption of foods and beverages like tea and tamarind that inhibit iron absorption, immediately after food especially by the vulnerable groups like pregnant women and children.
- Promotion of iron fortified iodised salt.

2. **Supplementation:** Food based approaches through food fortification and dietary diversification are sustainable strategies for preventing iron deficiency and (Iodine Deficiency Disorder (IDD)). As availability is low and dietary animal sources (haem -iron) are expensive, the key step towards addressing iron deficiency and IDD would be the implementation and scaling up of the IFA supplementation programme.

For preventing anaemia, low dosage iron is adequate. The National Anaemia Prophylaxis Programme (NAPP) in India, pregnant and lactating women receive 60 mg elemental iron+ 500 mcg folic acid (IFA tablet) daily for atleast 100 days during



pregnancy and preschool children receive 20 mg elemental iron+ 100 mcg folic acid daily. To improve compliance, ensuring availability to all beneficiaries, follow up of pregnant women through ante natal care (ANC) for completion of therapy, counseling on common side effects, risks associated with anaemia, provision of incentives to frontline workforce, frequent evaluation to assess the programme, weekly or biweekly administration of iron and folate and inclusion of adolescent as beneficiaries are needed.

3. National Iron⁺ Initiative: Taking cognizance of ground realities in the operation of the programme, Ministry of Health and Family Welfare took a policy decision to develop the National Iron⁺ Initiative. This initiative will bring together existing programmes (IFA supplementation for pregnant and lactating women and children in

the age group of 6-60 months). Thus National Iron⁺ Initiative will reach the following age groups for supplementation :

- Biweekly iron supplementation for preschool children of 6 months to 5 years.
- Weekly supplementation for children from 1st to 5th grade in Government and Government aided schools.
- Weekly supplementation for school children (5-10 years) at anganwadi centres.
- Pregnant and lactating women, daily for 100 days.
- Weekly supplementation for women in reproductive age group.

In addition to increased iron and folate intake, improvement in environmental sanitation and personal hygiene are also needed to control worm infestations and infections. Deworming done regularly would help in reducing the incidence of anaemia and improve the efficacy of iron supplements. An improvement in food intake results in improvement in haemoglobin levels.



Fig 12.2: National Iron⁺ Initiative



ACTIVITY

7. Find out the name of the medicine given for deworming in your school every 6 months.
8. How frequently are iron tablets given? Find out its composition.

12.1.4 Prevention and control of vitamin A deficiency

1. Nutrition education
2. Dietary modification: The most rational and sustainable long term solution to control of vitamin A deficiency is to ensure that the community includes foods rich in vitamin A or its precursor regularly in their daily diets.
3. Periodic supplementation of vitamin A: Currently the massive vitamin A supplementation programme aims at providing the first dose of 1,00,000 IU at 9 months (at the time of measles immunization) to be followed by bi annual administration of 2,00,000 IU for children between the ages of 18 months and 59 months. The coverage under massive dose vitamin A administration has improved substantially

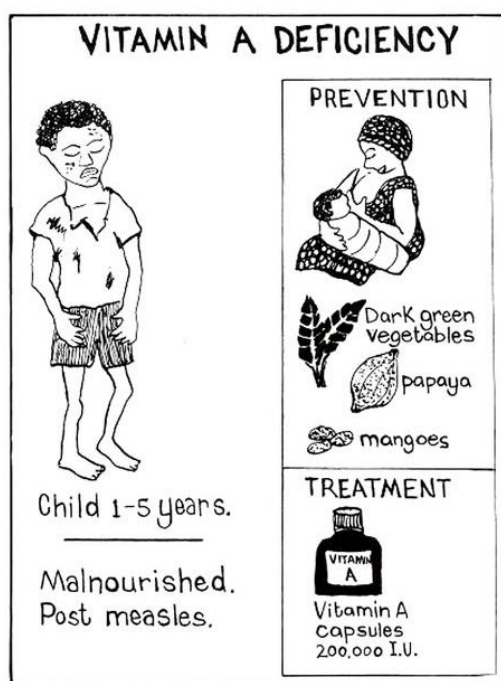


Fig 12.3: Vitamin a dose

after the initiation of biannual administration.

4. Fortification of commonly and widely consumed foods with vitamin A: Fortification or enrichment of widely consumed foods with vitamin A is another strategy to prevent and control vitamin A deficiency. Foods which are consumed daily by all sections of the community with little variation in the intake are generally utilized for the fortification. Fortified foods are integrated into the conventional food system as value added products to reach a large segment of population.

12.2 Food Fortification Programme

Fortification of food items such as wheat flour, bread, milk, sugar, drinking water and common salt are in practice in different parts of the world.

Iodised salt: Common salt has been selected as a suitable vehicle for fortification of iodine to control IDD (Iodine Deficiency Disorder). The technology involved in fortification of salt with iodine involves either dry mixing or spray mixing of salt with iodine source mainly with potassium iodate. It is an economical, convenient



Fig 12.4: Iodised salt



ACTIVITY

9. Selvi is a 3 year old suffering from vitamin A deficiency. Suggest to her mother what are the foods that can be included in Selvi's diet.
10. What are the nutrients fortified in salt available in ration shops?
11. What are the nutrients that are fortified in milk?

and effective means of mass prophylaxis in endemic areas.

Double fortified salt: Iodine deficiency disorders and iron deficiency anaemia are widely prevalent and often coexist in the country. Fortification of food with iodine and iron is recommended as one of the strategies to prevent and control these two deficiency disorders. NIN has developed a suitable technology for dual fortification of common salt with iodine and iron. The stability of iodine is satisfactory in double fortified salt with very little loss of iodine in six months.

12.3 National agencies

12.3.1 National Institute of Nutrition (NIN)

The National Institute of Nutrition (NIN) is one of the permanent research institutes of the Indian Council of Medical Research under the Ministry of Health and Family Welfare, Government of India. It was found in 1918 as part of Coonoor Pasteur Institute.

The objectives of National Institute of Nutrition are to :

- identify various dietary and nutrition problems prevalent among

different segments of the population and continuously monitor diet and nutrition situation of the country.

- evolve suitable methods of prevention and control of nutrition problems through research, keeping the existing economic, social and administrative set up in view.
- investigate nutritional deficiencies, nutrient interactions and food toxicities at basic level for understanding the biochemical mechanism involved.
- provide training and orientation in nutrition to key health professionals.
- advise Government and other organizations on problems of nutrition.

12.3.2 Indian Council of Medical Research (ICMR)

The Indian Council of Medical Research (ICMR) is the apex body in India for the formulation, coordination and promotion of biomedical research. Intra mural research is carried out currently through the Council's 21 permanent research institutes. They do research on specific areas such as tuberculosis, leprosy, cholera and diarrhoeal diseases and viral diseases including AIDS. They also do



DO YOU KNOW...?



The headquarters of NIN is in Hyderabad. The headquarters of ICMR is in New Delhi

research on malaria, kalaazar, nutrition and food and drug toxicology, reproduction, immunohaematology, oncology and medical statistics. Research is also done on major metabolic diseases, occupational health and non communicable diseases.

In recent years, the ICMR is also intensifying research in non communicable diseases such as cardiovascular diseases, metabolic disorders, mental health problems, neurological disorders, blindness, liver diseases and cancer. Medical information is strengthened to meet the growing needs and demands of the community.

12.4 International Organisations

12.4.1 Food and Agricultural Organisation (FAO)

The Food and Agricultural Organisation came into existence in October 1945 with a mandate to raise levels of nutrition and standards of living, to improve agricultural productivity, and to better the conditions of rural population. By seeking to improve nutrition through nutrition-sensitive agriculture and food based approaches.

The Nutrition Division aims to:

- Create sustainable improvements in nutrition, especially among nutritionally vulnerable households and population groups.
- Provide information, assessments and analysis to combat hunger and reduce all forms of malnutrition.
- Assist countries in identifying people



who are insecure and vulnerable to nutritional problems.

Besides promoting food production and food security, one of the aims of FAO is to create a world, in which all children can grow, learn and flourish, developing into healthy, active and caring members of society.

12.4.2 World Health Organisation (WHO)

World Health Organisation is an agency of the United Nations. The organization came into function on 7th April 1948 which is celebrated as World Health Day. The most important objective that WHO seeks is the attainment of the most optimum level of the health of the people which would enable them to lead a socially, economically and mentally productive life.

WHO seeks to:

- Act as a directing and coordinating authority on international health activities.
- Collobarate the member states and other agencies in planning and carrying out health programmes.
- Prompt medical research and improve the under developed countries.
- Bring the health status to international level.
- Keep communicable diseases under constant surveillance, to give knowledge about health.
- Set certain standards for the quality control of drugs, vaccines and other detrimental substances to health.





DO YOU KNOW...?

Dr. Henk Bakedam is the WHO representative of India. He took up his role on 27 November 2015. He is a Dutch National and a medical Doctor by training.

The WHO guidelines on Nutrition are as follows:

- Baby friendly Hospital initiative.
- Calcium supplementation in pregnant women.
- Consultation on the Dietary management of moderate malnutrition in under 5 children.
- Daily iron and folic acid supplementation in pregnant women.
- Interventions on diet and physical activity.
- Use of multiple micronutrient powders for home fortification of foods consumed by infants and children 6-23 months of age.
- Vitamin A supplementation for infants 1-5 months of age.
- Vitamin A supplementation for infants and children 6-59 months of age.
- Vitamin A supplementation for postpartum women.
- Vitamin A supplementation in pregnant women.
- Weekly Iron- Folic acid Supplementation (WIFS) in women of reproductive age.

12.4.3. United Nations International Children's Fund (UNICEF)

United Nations Children's Fund (UNICEF) was created at the end of World War II in 1946 to relieve the suffering of children in war torn Europe and for the past 70 years UNICEF has strived to improve the lives of children and their families throughout the world. UNICEF's nutritional priorities include:



- Infant and Child feeding.
- Delivering vital micro-nutrients.
- Promoting maternal nutrition/ preventing low birth weight.
- Monitoring infant growth rates.
- Providing nutrition in emergencies.
- Preventing death from starvation and disease.
- Supporting community based programmes.

Education is the key to opportunities and UNICEF believes that quality education is a right for all children, whether in the developing world or amidst conflict and crisis. UNICEF believes that all children have a right to survive, thrive and fulfill their potential for the benefit of a better world.

Summary

- The ICDS was initiated in 1975 with the twin objective of ensuring nutrition of preschool children through supplementary feeding and psychosocial development through early stimulation and education.

- The major objective of the midday meal programme is to attract more children for admission to schools and retain them so that literacy improvement of children could be brought about.
- Prevention of anaemia includes dietary approach and supplementation.
- Vitamin A deficiency can be controlled by nutrition education,

dietary modification, periodic supplementation and fortification.

- Common salt has been selected as a suitable vehicle for fortification of iodine to control IDD.
- The national agencies which work in the field of nutrition are NIN and ICMR.
- The international agencies in the field of nutrition include FAO, WHO and UNICEF.

Glossary

Terms	Meaning
FAO	Food and Agricultural Organisation
ICDS	Integrated Child Development Services
ICMR	Indian Council of Medical Research
IDD	Iodine Deficiency Disorders
MDMP	Midday Meal Programme
NIN	National Institute of Nutrition
NNAPP	National Anaemia Prophylaxis Programme
UNICEF	United Nations International Children's Fund
WHO	World Health Organisation

Questions

Part - A

Choose the correct answer (1 mark)

- ICDS was initiated in the year _____.
 (a) 1965 (b) 1975
 (c) 1985 (d) 1984
- In Tamil Nadu, the Chief Minister's noon meal programme was launched on _____.
 (a) 1st July 1982 (b) 2nd October 1976
 (c) 15th July 1966 (d) 14th June 1996
- The headquarters of WHO is in _____.
 (a) Rome (b) Geneva
 (c) New York (d) Delhi
- World Health Day is celebrated on _____.
 (a) 15th May (b) 7th April
 (c) 10th December (d) 12th may





5. Iodine is fortified in _____.

- (a) sugar (b) rice
- (c) salt (d) honey

6. NIN is located in _____.

- (a) Hydrebad
- (b) Mumbai
- (c) Chennai
- (c) New York

7. Common salt is fortified with _____ and _____.

- (a) iron and iodine
- (b) vitamin A and vitamin D
- (c) iron and protein
- (d) iron and protein

8. In Chief Minister's noon meal programme, eggs are given _____ a week.

- (a) once (b) thrice
- (c) four (d) all days.

9. FAO came into existence in _____.

- (a) October 1945
- (b) December 1953
- (c) November 1971
- (d) November 1972

10. Children 18 months to 59 months are given _____ IU of vitamin A every 6 months

- (a) 1, 00,000
- (b) 2,00,000
- (c) 3,00,000
- (d) 4,0000

Part - B

write short answers (2 marks)

1. Expand: (a)WHO (b) FAO.
2. What are the objectives of FAO
3. What are the reaserach areas of ICMR ?
4. Write a note on double fortified salt.
5. Write on Vitamin A prophylaxis programme.

Part- C

Answer in brief (3 marks)

1. Write on new Mother and child Protection card.
2. What are the objectives of school feeding programmes?
3. What are the foods given under midday meal programme?
4. What are the objectives of NIN?
5. Write on National Iron⁺ initiative.
6. Write on National anaemia prophylaxis programme.

Part- D

Answer in detail (5 marks)

1. Write on the WHO guidelines on nutrition.
2. What are the nutritional priorities of UNICEF?
3. How will you control vitamin A deficiency?
4. How will you control anaemia?
5. What are the broad principles in formulating midday meals for school children?