

M.Sc. (DFSM)

**Master of Science in Dietetics and Food Service Management
M.Sc. (DFSM)**

1st Year Assignment

ASSIGNMENTS 1-6

July 2012 and January 2013 Sessions

(These assignments relate to Courses MFN-001, 002, 003, 006, 008 and 010)



SCHOOL OF CONTINUING EDUCATION

Indira Gandhi National Open University

Maidan Garhi, New Delhi -110 068

Masters of Science Degree Programme in Dietetics and Food Service Management
M.Sc. (DFSM)
ASSIGNMENTS 1-6

Dear Students,

You will have to do ten assignments in all to qualify for a M.Sc. (DFSM) degree. For each course, you will have to do one assignment. All the assignments are tutor marked and each Tutor Marked Assignment carries 100 marks. In this assignment booklet there are six assignments and the course-wise distribution of assignments is as follows:

Assignment 1 (TMA-1): based on MFN-001 (Units 1-12)

Assignment 2 (TMA-2): based on MFN-002 (Units 1-12)

Assignment 3 (TMA-3): based on MFN-003 (Units 1-14)

Assignment 4 (TMA-4): based on MFN-006 (Units 1-18)

Assignment 5 (TMA-5): based on MFN-008 (Units 1-12)

Assignment 6 (TMA-6): based on MFN-010 (Units 1-12)

INSTRUCTIONS

Before attempting the assignments please read the following instructions carefully.

- 1) Write your Enrolment Number, Name, Full Address, Signature and Date on the top right hand corner of the first page of your response sheet.
- 2) Write the Programme Title, Course Code, Title Assignment Code and Name of our Study Centre on the left hand corner of the first page of your response sheet. Course Code and Assignment Code may be reproduced from the assignment.

The top of the first page of your response sheet should look like this:

Enrolment No
Name
Address
.....
Course Title
Assignment No
Date
Programme Study Centre

All Tutor Marked Assignments are to be submitted at the study centre assigned to you.

- 3) Read the assignments carefully and follow the specific instructions if any given on the assignment itself about the subject matter or its presentation.
- 4) Go through the Units on which assignments are based. Make some points regarding the question and then rearrange those points in a logical order and draw up a rough outline of your answer. Make sure that the answer is logical and coherent, and has clear connections between sentences and paragraphs. The answer should be relevant to the question given in the assignment. Make sure that you have attempted all the main points of the question. Once you are satisfied with your answer, write down the final version neatly and underline the points you wish to emphasize. While solving numerical, use proper format and give working notes wherever necessary.
- 5) Use only foolscap size paper for your response and tie all the pages carefully. Avoid using very thin paper. Allow a 4 cm margin on the left and at least 4 lines in between each answer. This may facilitate the evaluator to write useful comments in the margin at appropriate places.
- 6) ***Write the responses in your own hand.*** Do not print or type the answers. Do not copy your answers from the Units/Blocks sent to you by the University. If you copy, you will get zero marks for the respective question.
- 7) Do not copy from the response sheets of other students. If copying is noticed, the assignments of such students will be rejected.
- 8) Write each assignment separately. All the assignment should not be written in continuity.
- 9) Write the question number with each answer.
- 10) The completed assignment should be sent to the Coordinator of the Study Centre allotted to you. Under any circumstances do not send the tutor marked response sheets to the Student Registration and Evaluation Division at Head Quarters for evaluation.
- 11) After submitting the assignment at the Study Centre get the acknowledgement from the Coordinator on the prescribed assignment remittance-cum-acknowledgement card.
- 12) In case you have requested for a change of Study Centre, you should submit your Tutor Marked Assignments only to the original Study Centre until the change of Study Centre is notified by the University.
- 13) If you find that there is any factual error in evaluation of your assignments e.g. any portion of assignment response has not been evaluated or total of score recorded on assignment response is incorrect, you should approach the coordinator of your study centre for correction and transmission of correct score to headquarters.

A Note of Caution

It has been noticed that some students are sending answers to Check Your Progress Exercises to the University for evaluation. Please do not send them to us. These exercises are given to help you in judging your own progress. For this purpose, we have provided the answers to these exercises at the end of each Unit. We have already mentioned this in the Programme Guide.

Before dispatching your answer script, please make sure you have taken care of the following points:

- Your roll number, name and address have been written correctly.
- The title of the course and assignment number have been written clearly.
- Each assignment on each course has been written on separate sheets and pinned properly.
- All the questions in the assignments have been answered.

Now read the guidelines before answering questions.

GUIDELINES FOR TMA

The Tutor Marked Assignments have two parts.

Section A: Descriptive Questions (80 marks)

In this section, you have to answer ten questions (of 8 marks each). Answer each question in about 250-300 words.

Section B: Objective Type Questions (OTQ) (20 marks)

This section contains various types objective questions.

POINTS TO KEEP IN MIND

You will find it useful to keep the following points in mind:

- 1) **Planning:** Read the assignments carefully. Go through the units on which they are based. Make some points regarding each question and then rearrange these in a logical order.
- 2) **Organization:** Be a little more selective and analytical. Give attention to your introduction and conclusion. The introduction must offer your brief interpretation of the question and how you propose to develop it. The conclusion must summarize your response to the question.

Make sure that your answer:

- a) is logical and coherent.
 - b) has clear connections between sentences and paragraphs.
 - c) is written correctly giving adequate consideration to your expression, style and presentation.
 - d) does not exceed the number of words indicated in the question.
- 3) **Presentation:** Once you are satisfied with your answers, you can write down the final version for submission, writing each answer neatly and underline the points you wish to emphasize.

ASSIGNMENT 1
TMA-1
Applied Physiology

Course Code: MFN-001

Assignment Code: MFN-001/AST-1/TMA-1 / 2012-13

Last Date of Submission: For July 2012 Session : 15th November, 2012
For January 2013 Session : 15th May, 2013

Maximum Marks: 100

This assignment is based on Units 1-12 of the MFN-001 Course.

Section A - Descriptive Questions

(80 marks)

1. a) What is a cell? Briefly explain the prokaryotic cell and its organization. (4)
b) Define the term tissue. List down the types of animal tissues and explain any one of them. (4)
2. a) What is the composition of blood. Explain the physiology of anemia. (4)
b) Briefly discuss what antibodies are. (4)
3. a) Briefly elaborate on the movements of gastro intestinal tract. (4)
b) Briefly discuss the functions of intestinal juices. (4)
4. a) Give structure and composition of salivary gland. (4)
b) Illustrate the various parts of the small intestine. Briefly explain the functions of small intestine. (4)
5. a) Describe structure and functions of the nephron. (4)
b) Briefly explain how the kidneys maintain the acid/base balance in an acid and an alkaline diet. (4)
6. a) Describe the nerve cell morphology. (4)
b) Explain the types and functions of the nerves which are a part of the peripheral nervous systems. (4)
7. a) Briefly discuss the parts of the brain referred to as the emotional brain. (4)
b) Briefly discuss the neurons involved in the contraction of the smooth muscles. (4)
8. a) List the different organs involved in taste perception. (4)
b) Briefly discuss the different types of papillae present in the tongue and their sensitivity to different stimuli. (4)
9. a) List the functions of growth hormone and discuss the consequences of its hypo secretion and hyper secretion. (4)
b) How does blood sugar level control insulin secretion? Briefly discuss the complications when insulin secretion is effected. (4)
10. a) What do you understand by the term endocrine gland? Enlist the major hormones secreted by these glands. (4)
b) Discuss the functions of hormones secreted by thyroid gland. (4)

Section B -OTQ (Objective Type Questions)

(20 marks)

- 1) Explain the following briefly in 2-3 sentences:- (10)
- i) Anterior pituitary
 - ii) Erythropoiesis
 - iii) Peristaltic movement
 - iv) Hypoxia
 - v) Cholesterol
 - vi) Ketone bodies
 - vii) Dialysis
 - viii) Porphyrins
 - ix) Hemodialysis
 - x) Osmosis
- 2) Give the functions/role of the following in our body. (10)
- i) Pineal gland
 - ii) Cochlea
 - iii) Bile
 - iv) Large intestine
 - v) Platelets
 - vi) Pyloric Orifice
 - vii) Urethra
 - viii) Adrenal gland
 - ix) Epinephrin
 - x) Glucagon

ASSIGNMENT 2
Nutritional Biochemistry (TMA-2)

Course Code: MFN-002

Assignment Code: MFN-002/AST-2/TMA-2/2012-13

Last Date of Submission: For July 2012 Session : 30th November, 2012

For January 2013 Session : 30th May, 2013

Maximum Marks: 100

This assignment is based on Units 1-12 of the MFN-002 Course.

Section A - Descriptive Questions

(80 marks)

1. a) With the help of a flow chart illustrate the process of protein and carbohydrate digestion. (4)
b) Briefly discuss the commonly occurring polysaccharides. (4)
2. a) Gluconeogenesis is the reversal of glycolysis. Comment on the statement, presenting the glycolysis and gluconeogenesis pathway. (4)
b) Briefly explain the reaction used for quantitative estimation of amino acids. (4)
3. a) Discuss the structure and physio - chemical properties of any one of the water soluble vitamins. (4)
b) Describe the formation of Vitamin D₃ in the skin. (4)
4. a) Define enzyme kinetics. Explain the concept of enzyme specificity. (4)
b) Explain the factors affecting enzyme activity. (4)
5. a) Work out the energy production in glycolysis. (4)
b) Discuss the functions of the citric acid cycle and HMP Pathway. (4)
6. a) Briefly illustrate the oxidation of fatty acids in the human body. (4)
b) Comment on the following :-
 - a) Fate of pyruvate (2+2)
 - b) Significance of gluconeogenesis
7. a) Discuss the two process by which the α -amino group is removed from the amino acid. (4)
b) What is “denovo synthesis” and “salvage pathway” for purine nucleotides? (2+2)
8. a) Define free radicals and discuss their mechanism of disposal. (4)
b) Discuss the role of free radicals in contributing to the risk of cardiovascular disease and carcinogenesis. (4)
9. a) Discuss the role of Vitamin A in normal vision. (4)
b) Explain the role of Vitamin D in maintaining the desirable plasma calcium levels. (4)
10. a) What is inborn error of metabolism? Enlist the disease related to carbohydrate metabolism. (4)
b) Explain what is phenylketonuria and give the dietary guidelines for its management. (4)

Section B - OTQ (Objective Type Questions)

(20 marks)

1. Tick the correct answer.
 - D) The glycosidic linkage which exists in sucrose is (10)
 - a) β (1,4)
 - b) α (1, 4)
 - c) α (1,2)
 - d) α (1,6)

- II) Linoleic acid is:
- MUFA
 - PUFA
 - Saturated acid
 - Unsaturated fatty acid
- III) The active form of ascorbic acid is:
- L-ascorbic acid
 - L-dehydroascorbic acid
 - None
 - Both a and b
- IV) The reproductive hormone is:
- Progesterone
 - Glucagons
 - Calcitonin
 - Antidiuretic hormone
- V) The other name for Niacin is:
- Vitamin B₃
 - Vitamin B₁
 - Vitamin B₆
 - Vitamin B₂
- VI) The non enzymatic small molecular weight antioxidant is:
- Anserine
 - Uric acid
 - Bilirubin
 - Vitamin - C
- VII) The metabolic product of arginine is:
- Creatine
 - Glutamine
 - Nitric oxide
 - Taurine
- VIII) Desaturation of stearic acid produces:
- Oleic acid
 - Palmitic acid
 - Linolenic acid
 - Linolenic acid
- IX) In glycogen storage disease the glycogen levels are:
- High
 - Very high
 - Normal
 - Very high
- X) The Lipoprotein that carries dietary triacylglycerol is:
- VLDL
 - HDL
 - LDL
 - Chylomicrons

2. Explain in 2-3 sentences and also give the structure whenever possible:

- Mutarolalion
- Hydrogenalion
- Zwitterion
- Congugated pwitterins
- Haloengymes

(10)

ASSIGNMENT 3
TMA-3
Food Microbiology and Safety

Course Code: MFN-003

Assignment Code: MFN-003/AST-3/TMA-3/2012-13

Last Date of Submission: For July 2012 Session : 31st December, 2012

For January 2013 Session :15th June, 2013

Maximum Marks: 100

This assignment is based on Units 1-14 of the MFN-003 Course.

Section A - Descriptive Questions (80 marks)

1. a) What is food microbiology? Briefly explain the microorganisms in fermented foods. (4)
b) Discuss the beneficial and harmful effect of micro-organisms in the context of microbiology?(4)
2. a) Define the term food hazards. List down the factors affecting food safety and explain any one of the factors. (4)
b) Elaborate on recent concerns to food safety. (4)
3. a) Briefly discuss the microorganisms present in milk, meat and fruits. (4)
b) What are the GRAS chemicals used in the food industry. Explain in brief. (4)
4. a) Differentiate between food borne infections and food borne toxic infections, giving examples. (4)
b) What are mycotoxins. Discuss the important mycotoxins affecting humans. (4)
5. a) Define and classify food contamination. (4)
b) Briefly discuss the toxic effects of environmental contaminants. (4)
6. a) What are the various classes of food additives? Enlist and explain their role in foods? (4)
b) What is the reason for adding colour to foods? List the synthetic food colours permitted for use in India and the foods which include these. (4)
7. a) Define the term food adulteration according to the PFA Act and discuss the reasons for food adulteration with examples. (4)
b) Briefly discuss the ill effects of different adulterants added in milk, oil and food colours. (4)
8. a) Define the term food handler. Discuss how a food handler can act as an important source of transmitting food borne diseases. (4)
b) Briefly explain why the employers need to maintain good personal hygiene. (4)
9. a) Define the term packaging and discuss major types of rigid packaging containers. (4)
b) Enumerate the functions of food packaging. Discuss how the moisture content of food influences the types of packaging material? (4)
10. a) Discuss the principles of risk communication. (4)
b) Describe briefly the seven principles of HACCP. (4)

Section B-OTQ (Objective Type Questions)

(20 marks)

- 1) Explain the relationship between the following : (10)
- a) Canning and Food Preservation
 - b) Temperature and Growth of micro-organism.
 - c) Toxic heavy metal and Food chain.
 - d) Interaction between food and packaging material.
 - e) Role of government and risk communication.
 - f) PH and Spoilage of Meat.
 - g) Nutrition Labelling and Nutrition Claims.
 - h) Antinutritional factors and Food contamination.
 - i) ERH and Deteriorative changes in foods.
 - j) Infective hepatitis and Oral Faecal Route.
- 2) Explain the following briefly in 2 or 3 sentences each. (10)
- i) Absolute food safety
 - ii) Genetically modified foods
 - iii) Water activity
 - iv) Thermophiles
 - v) Plasmolysis
 - vi) Candling
 - vii) Veno-occlusive disease
 - viii) Prions
 - ix) Botulism
 - x) Alkaloids

ASSIGNMENT 4
TMA-4
Public Nutrition

Course Code: MFN-006

Assignment Code: MFN-006/AST-4/TMA-4/2012-13

Last Date of Submission: For July 2012 Session : 31st January, 2013

For January 2013 Session : 31st August, 2013

Maximum Marks: 100

This assignment is based on Units 1-18 of the MFN-006 Course.

(80 marks)

Section A- Description Questions.

There are ten questions in this part. Each question carries equal marks.

1. a) Discuss the concept and scope of public nutrition, highlighting the role of public nutritionalist in health care delivery. (4)
b) What is protein energy malnutrition? Discuss the essential variable features of PEM in children. (4)
2. a) Describe the clinical features and preventive strategies for iodine deficiency. (4)
b) What are the methods for prevention and control of anemia? (4)
3. a) Briefly explain determinant of food security. (4)
b) Explain the implications of population growth on quality of life. (4)
4. a) Define the term nutritional status. Discuss the significance of anthropometry in assessing nutritional status. (4)
b) Discuss WHO, 2006 classification for assessing the nutritional status. (4)
5. Enlist the manifestations linked with the deficiency of the following nutrients. (2+2+2+2)
- Thiamin - Riboflavin
- Niacin - Folic acid
6. a) Define nutrition monitoring and nutrition surveillance. List current programmes of nutrition monitoring in India. (4)
b) List the supplementary feeding programmes and explain any one which has relevance to primary school children. (4)
7. a) What are the biochemical tests used for assessing vitamin A deficiency. (4)
b) Define the term diet survey. List the methods used for assessing the dietary intakes of individuals and explain any one of them. (4)
8. a) Differentiate between food based and nutrient based strategies. (4)
b) Discuss the role of dietary diversification and food fortification in combating public nutrition problem. (4)
9. a) What do you understand by preventive strategies? How can it be helpful in combating malnutrition? (4)
b) Supplementation is a short term preventive strategy. Present a critical review on the statement. (4)
10. a) Discuss any one technique you would use for conducting need assessment. (4)
b) Briefly comment on the importance and constraints of nutrition education. (4)

Section B- OTQ (Objective Type Questions)

(20 Marks)

- 1) Explain the following briefly in 2-3 sentences. (10)
- i) Programme monitoring
 - ii) Formative research
 - iii) Interpersonal Communication
 - iv) Process of nutrition education communication
 - v) Lathyrism
 - vi) Formative evaluation
 - vii) Public distribution system
 - viii) Double fortified salt
 - ix) Change agents
 - x) Keratomalacia
- 2) Fill in the blanks :- (10)
- i) Tetanus is caused by a toxin produced by the bacillus.....
 - ii) Supplementary food should provide Kcal and..... g proteins per day/ per child.
 - iii) On adequate iodine intake, the median urinary iodine is
 - iv) BMI ofis considered as an indicators of obese grade 11.
 - v) Bleeding gums is a manifestation of.....deficiency.
 - vi)deficiency leads to pernicious anemia.
 - vii) Fortification of common salt is done with
 - viii)is an example of a common vaccine preventable disease.
 - ix) Birth weight of a normal child is
 - x) Deficiency of niacin leads to.....

Assignment 5
TMA-5
Principles of Food Science

Course Code: MFN-008
Assignment Code: MFN-008/AST-5/TMA-5/2012-13
Last Date of Submission: For July 2012 Session : 28th February, 2013
For January 2013 Session :30th September, 2013

Maximum Marks : 100

This assignment is based on Units 1 - 12 of the MFN-008 Course.

Section A - Descriptive Questions

(80 Marks)

There are ten question in this part. Each question carries equal marks.

- 1 a) Define food science and technology and discuss its scope in the context of dietetics and food service management. (4)
b) Briefly discuss the functional role of sugars in the food industry. (4)
2. a) Discuss the functional application of modification starches. (4)
b) What are soy protein concentrates? Discuss their applications in the food industry. (4)
- 3 a) Give the functional role of minerals in the food industry. (4)
b) Briefly explain the enzyme utilization and application of enzymatic analysis in food industry. (4)
- 4 a) Define the term pigment and discuss the natural colours used in foods. (4)
b) Briefly discuss the properties of colloidal system. (4)
5. a) Enlist the methods where thermal processing is applied? Discuss briefly anyone of them. (4)
b) Describe the term drying. Discuss the changes which occur during drying. (4)
6. a) Why do we dry a food? Briefly discuss sun and solar drying. (4)
b) Briefly discuss freezing of food by contact with cooled gas. (4)
7. List the changes in the following foods during processing: (2+2+2+2)
 - Spinach
 - Milk and milk products
 - Meat
 - Fish
8. a) Explain principles and importance of food preservation. (4)
b) Explain the process and importance of sterilization and canning. (4)
9. a) What are fermented foods? How are they prepared? Explain giving brief examples. (4)
b) Present a brief review on the traditional methods of food processing used today. (4)
10. a) What do you understand by product development. (4)
b) Discuss the role and process of sensory evaluation in the product development process. (4)

Section B - OTQ (Objective Type Questions)

(20 Marks)

- 1) Explain the following briefly in 2-3 sentences each: (10)
- i) Invert sugar
 - ii) 12 D Process
 - iii) Microbial polysaccharides
 - iv) Tyndall effect
 - v) Minimally processed fresh foods
 - vi) Hydration properties of protein
 - vii) Rheology
 - viii) Cold-shortening
 - ix) Whey protein concentrates
 - x) Hedonic rating
- 2) Fill in the blanks : (10)
- i)is the enzyme from the papaya fruit.
 - ii) is a natural colourant in plant foods.
 - iii)is used in the vitamin fortification of flour.
 - iv) A colloidal system in which solid panicles are dispersed in a liquid is refereed to as a
 - v) Foam stability can be determined by..... and
 - vi) Changes occurring in egg-white are due to presence of..... in it.
 - vii) Freezing temperatures range fromto
 - viii)is a synthetic antioxidant.
 - ix) Function of mould in food fermentations is synthesis of
 - x)is resistance to flow of a liquid.

ASSIGNMENT 6
TMA-6
Understanding Computer Applications

Course Code: MFN-010

Assignment Code: MFN-010/AST-6/TMA-6/2012-13

Last Date of Submission: For July 2013 Session : 31st March, 2013
For January 2013 Session : 31st October, 2013

Maximum Marks : 100

This assignment is based on Units 1 - 12 of the MFN-010 Course.

1. Write the step-by-step procedure to perform the following activities in Windows OS: (20)
 - (1) Finding the list of document files created during last week.
 - (2) Open a document as read only.
 - (3) Creating a new folder.
 - (4) Finding the IP address of your computer.
 - (5) Changing Printer and Printing options.

2. Create a MS PowerPoint presentation on any topic of your interest, consisting of about 10 slides involving all the following activities: (20)
 - (i) It should have a Master Slide with the title.
 - (ii) Insert the header and footer in all the slides except master.
 - (iii) Set the font properties.
 - (iv) One table should be one of the slide.
 - (v) One slide should contain a Graph.
 - (vi) Insert an image on one of the slide.

3. Create a document using Microsoft Word. Enter about five pages. The text should contain: (20)
 - A table with 4 columns, having proper headings and borders.
 - The pages should have margins as what they are in your blocks.
 - The page number should also appear as they do in your printed blocks.
 - Reformat the whole document as to appear in 3 columns.
 - However, you may show the table using more than one column.
 - Demonstrate at least two arithmetic features and Auto text features of WORD.Document the process of creation of above document file.

4. You are the manager of a canteen. Create a worksheet using excel maintaining the monthly expenses of the canteen under various heads, for a year. Your assignment should contain: (20)
- Formulas that automatically calculate
 - You must find the average expenses per month
 - Automatically find the month when the minimum amount was spent
 - Create a chart for head wise expenditure per month
5. Explain the following term with the help of an example/diagram, if needed. (20)
- a) CPU
 - b) Hard Disc
 - c) Input/output device
 - d) TCP/IP
 - e) Ergonomics
 - f) Maintenance of your computer
 - g) Virus
 - h) Internet
 - i) Chat
 - j) Networking