End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
INTRODUCTION TO LIFE SCIENCES (BN&D-101)

Time: 3 hrs                   Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Explain the following and mention there basic SI units, if applicable:
   a) Length.
   b) Area.
   c) Volume.
   d) Weight.
   e) PH.
   f) Boiling point.
   g) Relative density.
   h) Temperature.
   i) Buffer.
   j) Humidity.

   2x10

PART-A

Q.2 Write explanatory note on the following:
   a) Kingdom protista.
   b) Economic importance of algae.
   c) Advantages of five Kingdom classification.
   d) Saprophytic bacteria.

   5x4

Q.3 Differentiate between the following:
   a) Prokaryotic cell and eukaryotic cell.
   b) Plant cell and animal cell.

   10x2

Q.4 a) Explain the five Kingdom classification in detail. Also give examples of each group.

   10
   b) Differentiate between algae and fungi.
   c) Differentiate between Bacteria and protozoan.

   5 5

PART-B

Q.5 Explain the following chemical reactions:
   a) Double displacement reactions.
   b) Decompositions reactions.
   c) Displacement reactions.
   d) Oxidation-reduction reactions.

   5x4

Q.6 What is a cell? Explain the structure of a cell with explanation of any six organelles in detail.

   20

Q.7 Complete the following sentences:
   a) Bacteria differs from fungi as ____________.
   b) Pseudopodia is ____________________.

   20
c) Mycohorrizae is ________________.
d) The reproduction in fungi is ____________.
e) Chemoautotrophs and sulphur oxidizing bacteria differ as ____________.

4x5

End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
FUNDAMENTALS OF FOOD AND NUTRITION (BN&D-102)

Time: 3 hrs                       Max Marks: 100
Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Discuss the scope of nutrition and dietetics in the present context. Explain how this knowledge is helpful in our day to day life. 20

PART-A

Q.2 Discuss the functions, RDA, dietary sources and deficiency problems related to carbohydrates and proteins. 20

Q.3 Write short notes on:
   a) Vitamin-A.  
   b) Vitamin-C 10x2

Q.4 Write short notes on:
   a) Calcium.  
   b) Iron. 10x2

PART-B

Q.5 What are the main objectives of cooking? Explain the principles of cooking in detail. 20

Q.6 Describe the different methods of cooking and explain the advantages and disadvantages of each cooking method in brief. 20

Q.7 Write short notes on:
   a) Vegetarianism.  
   b) Nano foods.  
   c) Textured foods.  
   d) Genetically modified foods. 5x4
End Semester Examination, May 2016  
B. Sc. (N & D) – First Semester  
BIOCHEMISTRY-I (BN&D-103)

Time: 3 hrs                   Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Briefly explain the following terms:
   a) Mitochondria.
   b) Fat-soluble vitamins.
   c) Starch.
   d) Microminerals.
   e) Electrolyte balance. 4x5

PART-A

Q.2 a) Define minerals. Explain various biochemical functions of minerals in the body. 10  
b) Discuss the electrolyte composition of body fluids in detail. 10

Q.3 a) How are vitamins important for various functions of the body? 10  
b) Describe how the digestion of proteins take place in the body. 10

Q.4 a) Explain the classification and properties of fats in brief. 10  
b) What is the distribution of water in the body? Explain. 10

PART-B

Q.5 a) Give structures of the following:
   i) Amino acid.
   ii) Glycosidic linkage.
   iii) \( \beta \)-pleated sheets.
   iv) Water. 2^{1/2}x4  
b) Give classification and properties of carbohydrates in detail. 10

Q.6 a) Differentiate between the following:
   i) Polysaccharides and oligosaccharides.
   ii) Macrominerals and microminerals. 5x2  
b) Write a note on ‘biochemical functions of vitamin C’. 10
Q.7 Draw a neat and well labeled diagram of eukaryotic cell. Also explain its subcellular organelles in brief.

20

End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
ANATOMY AND PHYSIOLOGY-I (BN&D-104)

Time: 3 hrs                   Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 What is the basic unit of living body? Describe its structure, parts and functions in detail.
20

PART-A

Q.2 Describe various parts of GI tract, their secretions and functions in detail. 20

Q.3 Write short notes on any four:
a) RBC and its functions.
b) Mitochondria with structure.
c) Structure of pancreas and its functions.
d) Nervous tissues.
e) Haerioipoiesis
5x4

Q.4 Write short notes on (any four):
a) Mechanism of blood clotting.
b) Irritable bowel syndrome.
c) Osmosis.
d) Digestion of proteins from mouth to end of GI tract.
e) Active transport.
5x4

PART-B

Q.5 Describe the classification of joints and their characteristics. Define the bone formation and its growth in detail.
20

Q.6 Describe all the respiratory organs and their functions. Define in detail the mechanism and regulation of respiration.
20
Q.7 Write short notes on (any four):
   a) Osteoporosis.
   b) Asthma.
   c) Atherosclerosis.
   d) Exchange of gases.
   e) Blood pressure.
   5x4

End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
FOOD HYGIENE AND SANITATION (BN&D-105)

Time: 3 hrs                   Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Write a note on: “Swacch Bharat Abhiyan”.
   10

PART-A

Q.2 Describe the general principles of food hygiene.
   10

Q.3 What are the sanitary aspects of buildings and equipments?
   10

Q.4 Write a note on the quality of water and its uses in food industry.
   10

PART-B

Q.5 What are the cleaning practices followed in catering organizations?
   10

Q.6 Describe HACCP with a suitable case study.
   10

Q.7 What are the principles involved in insect and pest control?
   10
End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
HUMAN DEVELOPMENT (BN&D-106)

Time: 3 hrs                Max Marks:    50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Discuss the various principles of human development.  
10

PART-A

Q.2 Differentiate between growth and development. Support your answer using suitable examples.  
10

Q.3 Discuss the various stages involved at the time of delivery and birth of a baby.  
10

Q.4 Discuss in detail any one theory that emphasizes on environment factor in the process of development.  
10

PART-B

Q.5 Write a detailed note on ‘different plays during infancy’.  
10
Q.6 Discuss the importance of social development during adulthood.  

10

Q.7 What are the different forms of development seen during childhood period?  

10

End Semester Examination, May 2016  
B. Sc. (N & D) - Second Semester  
ENVIRONMENTAL STUDIES (CH-202)

Time: 3 hrs                   Max Marks: 50  
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory.** Attempt any **TWO** questions from Part A and **TWO** questions from Part B. Each question carries equal marks.

Q.1 How would environmental awareness help to protect our environment and how do we apply nutrition aspects to environmental studies?  

10

**PART-A**

Q.2 Discuss the major uses of forest. What are the major causes and consequences of deforestation?  

10

Q.3 Define ecology and ecosystem. Explain ecological pyramids with examples.  

10

Q.4 Define biodiversity. Explain genetic diversity, species diversity and ecosystem diversity in detail.  

10

**PART-B**
Q.5 What are the natural and man made pollutants that causes air pollution?  
10

Q.6 Explain disaster management. Discuss the measures to conserve water.  
10

Q.7 Briefly discuss HIV/AIDS, its mode of transmission and its effect on environment.  
10

End Semester Examination, May 2016  
B. Sc. (N & D) - Second Semester  
BIOCHEMISTRY-II (BN&D-203)

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 What is the overall contribution of citric acid cycle in biochemical aspects of food and nutrition?  
20

PART-A

Q.2 Explain the cycle of Hexose monophosphate shunt and add a note on its significance.  
20

Q.3 Explain the reactions involved in:  
a) Transamination.  
b) Deamination.  
10x2
Q.4 What are the functions of cholesterol? Describe cholesterol biosynthesis in detail.  

20

PART-B

Q.5 Explain the hormonal metabolism of the following:  
a) Carbohydrate metabolism.  
b) Protein metabolism.  

10x2

Q.6 Write short notes of the following:  
a) Differentiation between DNA and RNA.  
b) Glycogen metabolism.  

10x2

Q.7 Write notes on the following:  
a) Factors affecting enzyme activity.  
b) Theories of enzyme action.  

10x2

End Semester Examination, May 2016  
B. Sc. (N & D) – Second Semester  
NUTRITION THROUGH LIFE CYCLE (BN&D-204)

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Explain the dietary guidelines and their importance during the different stages of life.  

20

PART-A

Q.2 Discuss the physiological changes during infancy. How do these influence the nutritional requirements of an infant?  

20

Q.3 Discuss the diet and feeding pattern during:  
a) Preschool and school age.  
b) Adolescence.  

10×2
Q.4 Write short notes on:
   a) Reference Indian Man and Woman.
   b) Fats and essential fatty acid requirements. 10x2

PART-B

Q.5 Write in detail about the physiological changes which occur during pregnancy. 20
Q.6 What are the advantages of exclusive breastfeeding? 20
Q.7 Describe the different changes associated with ageing in detail. 20
Q.3  
   a) Draw the labelled diagram and synapse and explain it.  
   10  
   b) Explain the process of conduction of neural impulse in detail.  
   10  

Q.4  
   a) Describe the structure of ovary with labelled diagram.  
   10  
   b) Explain the phases of menstruation cycle in detail.  
   10  

PART-B  

Q.5  
   Write notes on following:  
   a) Structure of kidney and its function.  
   b) Process of urine formation.  
   10x2  

Q.6  
   Explain the anatomy of ear and hearing mechanism.  
   20  

Q.7  
   Write short notes on (any four):  
   a) Effect of exercise on respiration.  
   b) Refractory error of eye.  
   c) Nephrotic syndrome.  
   d) Effect of exercise on body fluids.  
   e) Micturition.  
   5x4  

End Semester Examination, May 2016  
B. Sc. (N & D) - Second Semester  
PSYCHOLOGY (BN&D-206)  

Time: 2 hrs  
Max Marks: 50  
No. of pages: 1  

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.  

Q.1  
   Explain the contribution of psychology in the field of nutrition and dietetics.  
   10  

PART-A  

Q.2  
   Write short notes on:  
   a) The work of psychologists.
b) Any FIVE applications of psychology.  
\[5 \times 2\]

Q.3 Discuss any TEN areas of psychology.  
\[10\]

Q.4 Discuss the following eating disorders:  
a) Anorexia Nervosa.  
b) Bulimia Nervosa.  
\[5 \times 2\]

**PART-B**

Q.5 Discuss the steps involved in counseling.  
\[10\]

Q.6 Explain in detail about family therapy.  
\[10\]

Q.7 Explain the process of clinical interviewing.  
\[10\]
Q.1 How can you give knowledge about first aid to patients in emergencies?  

PART-A

Q.2 What do you understand by first aid? Write down its principles.  

Q.3 Write down the medico legal aspects of emergency medical care.  

Q.4 Which type of aid is given to the patients of accidents (road) and animal bite?  

PART-B

Q.5 What is nursing? Write down the characteristics of a professional nurse.  

Q.6 Explain the comfort measures aid to rest and sleep.  

Q.7 Define Fowler’s position and dorsal recumbent position. Why is it important?
FIRST AID AND NURSING (BN&D-207)

Time: 3 hrs                   Max Marks:  50
Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 First aid and nursing are interrelated with each other. Justify the statement.  
  
PART-A

Q.2 What do you understand by First Aid? Write down its principles.  
  
Q.3 Write down the medics legal aspects of emergency medical care.  
  
Q.4 What is a First Aid kit? Write down the medicines and equipments that are essential in a kit.  
  
PART-B

Q.5 What is nursing and explain the characteristics of professional nurse.  
  
Q.6 Define Fowler’s position and Dorsal recumbent position and why this is important?  
  
Q.7 Explain the principles of nursing.  

Q.1 Discuss the role of herbs in day-to-day life.

10

PART-A

Q.2 Give the categorization of herbs based on their usage.

10

Q.3 Discuss the uses and benefits of following plants as herbs:
a) Piper Betel.
b) Zingiber officinales.

5x2

Q.4 Discuss outdoor and indoor herb gardening in brief.

10

PART-B

Q.5 Explain in detail about the culinary herbs.

10

Q.6 Write any five home remedies for each of the following:
a) Migraines.
b) Throat infections.

5x2

Q.7 Discuss about the herbal remedies for hair care at home.

10
End Semester Examination, May 2016
B. Sc. (N & D) - Second Semester
FAMILY MEAL MANAGEMENT (BN&D-GE-03)

Time: 2 hrs                   Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 What are the fundamental aspect of meal planning for the family?  

10

PART-A

Q.2 What is balance diet? How do we plan a balance diet with the help of food groups and food pyramid?  

10

Q.3 Discuss the importance of meal planning for the family. Explain the food faddism and faulty food habits with suitable examples.  

10

Q.4 What do you mean by Indian meal pattern? Describe the advantages and disadvantages of vegetarian and non-vegetarian meal pattern in detail.  

10

PART-B

Q.5 What is the importance of nutrition for growing infants? Write down the steps for successful weaning.  

10

Q.6 Explain the nutritional management during pregnancy.  

10

Q.7 Explain the importance of nutrition during elderly stage. Advise an elderly person for his nutritional management.  

10
End Semester Examination, May 2016
B. Sc. (N & D) - Second Semester
COMPUTER APPLICATIONS (BN&D-GE-04)

Time: 3 hrs                   Max Marks: 50
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory.** Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B.** Each question carries equal marks.

**Q.1**

a) What is auto wizard in MS-PowerPoint?
b) How can the documents and folders be managed in MS-Windows?
c) Define the term operating system. Name any two operating systems.
d) Write the steps to choose font in MS-Word document.
e) Explain different generations of graphs in MS-Excel.

\[2\times5\]

**PART-A**

**Q.2**

a) What are the main functions of operating system? Explain in detail.
b) Write short notes on:
   i) Multitasking operating system.
   ii) Real time operating system.

\[6\]

**Q.3**

a) Explain the following in MS-Word: Mail merge and Tables.
b) Explain the following in MS-PowerPoint: Animation, Word Art Gallery and preparing audience handouts.

\[4\times6\]

**Q.4**

Explain the following in MS-Excel:

a) Use of functions.
b) Text wrapping and data sorting.
c) Creating hyperlink to a word document.

\[3\times3\times4\]

**PART-B**

**Q.5**

a) What is a computer network? Compare various types of computer networks in brief.
b) Discuss the hardware and software requirements for LAN and WAN.

\[5\times5\]

**Q.6**

a) What are search engines? Explain any two search engines along with their features.
b) Discuss major applications and areas of internet in brief.

\[5\times5\]

**Q.7**

a) What is client server technology? How it is useful in a network?
b) Define the term topology. Explain bus, star and ring topology in detail.

\[4\times6\]
End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
FUNDAMENTALS OF FOOD AND NUTRITION (BND-101)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Classify carbohydrates. Discuss in detail about functions, RDA, dietary sources and deficiency problems related to carbohydrates.
10

Q.2 How do we determine energy value of food? Give the RDA of energy for different age group population.
10

Q.3 What are the objectives of cooking? Explain different methods of cooking with suitable examples.
10

Q.4 Classify minerals. Give functions, RDA, dietary sources and deficiency problems related to calcium and iron.
10

PART-B

Q.5 Define the following:
   a) Food.
   b) Nutrition.
   c) Adequate nutrition.
   d) Nutritional status.
   e) Malnutrition.
   1x5

Q.6 What are the physiological functions of foods?
5

Q.7 Explain the social and psychological functions of foods with suitable examples.
5

Q.8 Discuss about food groups and food pyramid.
5

Q.9 Explain about functional foods and their benefits.
5

Q.10 Explain about organic foods and their nutritional benefits.
5
Q.11 Discuss the advantages and limitations of vegetarianism.

5

End Semester Examination, May 2016
B. Sc. (N & D) – First Semester
PHYSIOLOGY (BND-102)

Time: 3 hrs                    Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Give the origin, different harmonics, their functions and syndromes resulting from hypo and hyper activity of the following:
a) Pituitary
b) Pancreas
10

Q.2 Explain lung volumes and capacities.
10

Q.3 Describe the digestion and absorption of carbohydrates and fats in human body.
10

Q.4 Describe various blood groups.
10

PART-B

Q.5 Write a short note on regulation of breathing.
5

Q.6 Describe the functions of cerebrospinal fluid.
5

Q.7 What are the different changes which occur during menstruation?
5

Q.8 Explain the role of glomerular filtration in the formation of urine.
5

Q.9 Define lactose intolerance and state the role of bile.
5

Q.10 Explain the role of dietary fibres in defecation.
5
Q.11 Define the following:
   a) Cerebrospinal fluid
   b) Apnoea
   c) Haemopoiesis
   d) Leukopenia
   e) Cholecystectomy

End Semester Examination, May 2016
B. Sc. (N & D) - First Semester
FUNDAMENTALS OF BIOCHEMISTRY (BND-103)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1
Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 What are polysaccharides? Discuss their physico-chemical properties in brief. 10

Q.2 Classify proteins on the basis of their structures. 10

Q.3 How does digestion of lipids takes place in the body? 10

Q.4 Explain in detail the bio-chemical role of minerals in the body. 10

PART-B

Q.5 Write a short note on ‘biomolecules’. 5

Q.6 Write down various properties of fats and lipids. 5

Q.7 What do you understand by essential amino acids? 5

Q.8 Give structure of:
   a) Sucrose.
   b) Maltose. 5

Q.9 Give dietary sources of the following:
   a) Vitamin A
   b) Sodium
   c) Vitamin C
Q.10 What are different types of fatty acids?  
Q.11 What are phospholipids?

End Semester Examination, May 2016  
B. Sc. (N & D) - Second Semester  
NUTRITIONAL BIOCHEMISTRY (BND-201)

Time: 3 hrs                   Max Marks: 60  
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

**PART-A**

Q.1 What do you understand by metabolism? Explain glycolysis in detail.  

Q.2 How is urea metabolised in the liver? Explain.

Q.3 Define ketone bodies. How is their formation takes place in the liver?

Q.4 Define enzymes. How are enzymes classified?

**PART-B**

Q.5 What is the role of hormones in regulation of metabolism?

Q.6 Explain the following terms:  
a) Osmosis  
b) Endocytosis

Q.7 Define the following:  
a) Cholesterol  
b) Fatty acids

Q.8 Differentiate between DNA and RNA.
Q.9 Briefly explain the functions of thyroid hormones.  

Q.10 What are various factors that affect enzyme activity?  

Q.11 Explain the following:  
a) Genetic code.  
b) HMP shunt.  

End Semester Examination, May 2016  
B. Sc. (N & D) - Second Semester  
NUTRITION THROUGH LIFE CYCLE (BND-202)  

Time: 3 hrs                   Max Marks: 60  
No. of pages: 1  

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.  

PART-A  

Q.1 Discuss the physiological changes which occur during infancy. How do these influences nutritional requirement of an infant.  

Q.2 Explain the developmental stages during pregnancy. Discuss the nutritional management during pregnancy.  

Q.3 Explain the growth and development during childhood. Discuss the food pattern and nutritional requirement during childhood.  

Q.4 Discuss giving reasons, various nutrition related problems common among the elderly. What steps would you advocate to overcome the same?  

PART-B  

Q.5 Explain the following terms:  
a) Growth.  
b) Development.
c) Menarche.
d) Menopause.
e) Hyperplasia and hypertrophy.

1x5

Q.6 Write the celebration dates of the following:
a) World health day.
b) World children’s day.
c) National nutrition week.
d) World cancer day.
e) World diabetes day.

1x5

Q.7 “Mother milk is best milk”. Explain.

Q.8 Describe the nutrition related complications during pregnancy.

Q.9 What is weaning? How we introduce weaning foods to a infant?

Q.10 Discuss the importance of low cost balance diet in a meal planning.

Q.11 Describe baby friendly hospital initiatives.

End Semester Examination, May 2016
B. Sc. (N & D) –Third Semester
THERAPEUTIC NUTRITION AND DIETETICS (BND-301)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Explain in detail about etiology, manifestation and dietary management in acute and viral hepatitis.

10

Q.2 Discuss therapeutic nutrition and its adaptation of normal diet in detail.

10

Q.3 Write down in detail the etiology, manifestation and dietary treatment for constipation.

10

Q.4 Write in detail about etiology and dietary treatment in gallstone.

10

PART-B

Q.5 Write short notes on:
a) Anorexia nervosa.
b) Bulimia nervosa.

5
Q.6 Discuss dietary management of fevers in brief.

Q.7 Give dietary management for a patient recovering from myocardial infarction.

Q.8 Explain routine diet in hospital in brief.

Q.9 Briefly explain nutrition in surgical condition pre and post operative diet.

Q.10 Write a short note on allergies.

Q.11 Discuss dietary management for gout and diabetes mellitus in brief.
PART-B

Write short notes on:

Q.5 Symptoms of lathyrism.  
Q.6 Causes of fluorosis.  
Q.7 Importance of iron for human body.  
Q.8 Classification of anemia.  
Q.9 Dietetic management of PEM.  
Q.10 Plan of action for vitamin A.  
Q.11 Symptoms of iron deficiency anemia.
Q.4 Define communication. Explain different models of communication citing suitable examples.

10

**PART-B**

Q.5 Write short notes on:
   a) Ethics in extension.
   b) Role play.

5

Q.6 Define management. Explain the scope of management in brief.

5

Q.7 Give brief account of extension approaches with a suitable example.

5

Q.8 Explain principles of extension education in brief.

5

Q.9 Define money. Explain various ways to supplement family income.

5

Q.10 Explain different types of decisions in brief.

5

Q.11 Define planning. Explain characteristics of planning.

5

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**End Semester Examination, May 2016**

B. Sc. (N & D) – Third Semester

**COMPUTER APPLICATIONS (BND-304)**

**Time:** 3 hrs

**Max Marks:** 60

**Note:** Attempt any **THREE** questions from **Part A** and **SIX** questions from **Part B**.

**PART-A**

Q.1 What are input and output devices? Write a note on various types of input and output devices used in computer.

10

Q.2 What is MS-WORD? Discuss its features which improve the readability and understanding of the document.

10

Q.3 What is WINDOW? Discuss about different types of Windows is brief.

10

Q.4 What is computer network? Describe all their categories with examples.

10

**PART-B**

Q.5 Write a note on hybrid network.

5
Q.6 Write short notes on (any two):
   a) Workbook in MS-EXCEL.
   b) Network media.
   c) Uses of internet.  \[2\frac{1}{2} \times 2\]

Q.7 What is control panel? Detail all the features come under it.  \[5\]

Q.8 What is a number system? Describe its types in brief.  \[5\]

Q.9 What do you understand by sorting of data in MS-EXCEL?  \[5\]

Q.10 Describe desktop of MS-WINDOWS.  \[5\]

Q.11 Give a brief note on graph generation feature of MS-EXCEL.  \[5\]
PART-B

Q.5 Describe the role of community nutritionist in improving the nutritional status of the community. 5

Q.6 What is food adulteration? Give any two examples. 5

Q.7 Write short notes on:
   a) Nutrition advocacy.
   b) Developing adequate community leadership. 2½x2

Q.8 Explain the National Health Policy in brief. 5

Q.9 What is extension education as a process? 5

Q.10 What is a relation between cultural pattern and diet related behavior of the people in any community? 5

Q.11 What are the factors which affect the food likes and dislikes of the people? 5

End Semester Examination, May 2016
B. Sc. (N & D) - Fourth Semester
FOOD PROCESSING AND TECHNOLOGY (BND-402)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1
Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Explain the milling process of rice with a flow chart. 10

Q.2 a) Define and enlist anti-nutritional factors present in legumes. 3
    b) Explain any two anti-nutritional factors. 7

Q.3 What do you understand by processing of market milk? Explain in details. 10

Q.4 Explain different types of packaging and packaging material used in food industry. 10
Q.5 Briefly discuss the structure and composition of corn.  

Q.6 What is traditional dry milling method adopted for pulses?  

Q.7 Define the following:  
   a) Hydrogenation.  
   b) Plasticizing.  

Q.8 Differentiate between:  
   a) Pulses and cereals.  
   b) MUFA and PUFA.  

Q.9 Give details of any two platform tests performed in milk industry.  

Q.10 What do you understand by decortication?  

Q.11 Write a short note on packaging of bakery products.
PART-A

Q.1 Entrepreneurs are born, not made. Critically analyze the statement and provide suitable examples and support your answer.

Q.2 “Buy one get one free” is an example of one of the techniques of promotion mix. Name the technique. Explain any two other technique of promotion mix.

Q.3 Employees are the most important and valuable source of an organisation’s growth and progress. Explain in detail a mechanism that helps the organisation is understand
Q.4 Define business ethics. What are the ethical issues that business face today? Discuss them with suitable examples.
10

PART-B

Q.5 Write short notes on:
   a) Labour law.
   b) Income tax.
   5
Q.6 Differentiate between salaries and wages with suitable examples.
   5
Q.7 What are financial ratios? Explain any two financial ratios.
   5
Q.8 Explain briefly criteria for principles of product selection and development.
   5
   5
Q.10 Explain the steps and initiatives taken by Government of India for promotion of entrepreneurship.
    5
Q.11 Briefly explain characteristics of entrepreneurship.
    5

End Semester Examination, May 2016
B. Sc. (N & D) - Fifth Semester
FOOD MICROBIOLOGY (BND-501)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 What do you mean by food borne infection? Discuss any one food borne infection in detail.
   10
Q.2 Write a detailed note on physiology of fungi.
   10
Q.3 How is water microbiology analyzed at food industries?  
10

Q.4 Who are the major beneficiaries of HACCP in food industries? Enlist the basic principles of HACCP.  
10

**PART-B**

Q.5 Write a short note on preservation of any food group.  
5

Q.6 Enlist the characteristics of food quality indicators.  
5

Q.7 What are endospores? Support your answer using a relevant diagram.  
5

Q.8 Differentiate between a prokaryotic and and eukaryotic cell.  
5

Q.9 How are bacteria important and useful in food industries?  
5

Q.10 Classify foods according to their case of spoilage by giving suitable examples.  
5

Q.11 Draw the cycle depicting the sequence of events to be followed in case of any food borne disease outbreak.  
5

**End Semester Examination, May 2016**  
B. Sc. (N & D) - Fifth Semester  
STATISTICS AND RESEARCH METHODOLOGY (BND-502)

Time: 3 hrs  
Max Marks: 60  
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

**PART-A**

Q.1 Compute median from the following data:

<table>
<thead>
<tr>
<th>Mid-Value</th>
<th>Frequency</th>
</tr>
</thead>
</table>


Q.2 Distinguish between primary data and secondary data. State the chief sources of secondary data. What precautions are to be observed when such data are to be used for any investigation?

Q.3 Calculate mode of the following data:

<table>
<thead>
<tr>
<th>Marks</th>
<th>No. of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>20</td>
<td>18</td>
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<tr>
<td>70</td>
<td>88</td>
</tr>
<tr>
<td>80</td>
<td>95</td>
</tr>
<tr>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

Q.4 Examine the merits and limitations of the observation method in collecting material. Illustrate your answer with suitable examples.

PART-B

Q.5 Briefly describe the different steps involved in a research process.

Q.6 Distinguish between:
   a) Convenience and purpose sampling.
   b) Systematic and stratified sampling.

Q.7 Explain the survey method of research giving suitable examples.

Q.8 Write short notes on the following:
   a) Types of research.
   b) Criteria of a good research.

Q.9 Point out the possible sources of error in measurement.

Q.10 Distinguish between a schedule and a questionnaire.

Q.11 Define correlation and also discuss its significance in brief.
B. Sc. (N & D) - Sixth Semester

FOOD SCIENCE THEORY (BND-601)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Discuss the following:
   a) Germination.
   b) Smoking point of oils.
   c) Crystalization of sugar.
   d) Types of fish. 2½x4

Q.2 Explain the different stages of sugar cookery. 10

Q.3 Discuss in detail the sensory evaluation of food. 10

Q.4 Write short notes on:
   a) Hydrogenation.
   b) Emulsions. 5x2

PART-B

Q.5 What is rancidity of oil? Explain the types of rancidity in detail. 5

Q.6 Discuss the process of formation of cheese. 5

Q.7 Explain the effect of acid and alkali on plant pigments. 5

Q.8 Describe the post mortem changes occurring in meat. 5

Q.9 What is gelation? Explain the factors affecting gelation. 5

Q.10 Discuss enzymatic browning in detail. 5

Q.11 Explain the composition and nutritive value of milk. 5

End Semester Examination, May 2016

B. Sc. (N & D) - Sixth Semester

INSTITUTIONAL FOOD ADMINISTRATION (BND-602)
PART-A

Q.1 Describe different steps involved in staff employment.  
10

Q.2 Explain development of food service institutions in detail.  
10

Q.3 Classify catering equipments in detail.  
10

Q.4 Write down the points to be kept in mind while selecting and buying of fruits, vegetables, fats and oils.  
10

PART-B

Q.5 Briefly discuss cost components and cost control in food service institution.  
5

Q.6 Write a short note on planning menus for college hostels.  
5

Q.7 Define personnel management.  
5

Q.8 Discuss the method of pricing in briefly.  
5

Q.9 What are the different factors affecting hygiene in food service establishments?  
5

Q.10 Explain styles of service in brief.  
5

Q.11 Write short notes on:
  a) Table decoration.  
  b) Table setting.  
  2½x2
Q.1 Write short notes on the following:
   a) Arches of foot.
   b) Branches of axillary artery.
   c) Deltoid.
   d) Median nerve in hand/palm.

   PART-A

Q.2 Describe structures of heart with chambers, coverings, surfaces, borders with clinical anatomy and labeled diagram.

Q.3 Describe the knee joint with various muscles acting on it and movements at knee joint.

Q.4 Explain brachial plexus with a well labeled diagram and describe any one nerve syndrome associated with its injury.

   PART-B

Q.5 Write short notes on:
   a) Femoral triangle.
   b) Cubital fossa.

Q.6 Write short notes on:
   a) Right atrium.
   b) Classification of epiphysis with one example of each.

Q.7 Write short notes on:
   a) Axillary lymph nodes.
   b) Femoral artery and its branches.
Q.1 a) Define: Homeostasis. 
b) What is diffusion? 
c) Write normal values of hemoglobin in adult males and females. 
d) Define anemia. 
e) Write names of pace maker tissues of heart. 
f) Name the stages of deglutition. 
g) Name the substances secreted by parietal cell of stomach. 
h) Write the names of contractions seen in small intestine. 
i) Write the cause of 1st and 2nd heart sound. 
j) Give one example each of isometric and isotonic muscle contraction.

PART-A

Q.2 List various cell organelles. Describe structure and functions of each organelle. 

Q.3 With the help of a labeled diagram describe cross-section of GIT showing different layers of its wall. Add a note on intrinsic and extrinsic innervations of GIT. 

Q.4 Explain molecular basis of skeletal muscle contraction. 

Q.5 What is cardiac output? Give its normal value. Discuss control of cardiac output in detail. 

PART-B

Q.6 Write a note on ECG. 

Q.7 What is Land Steiner’s law? Explain its role in blood grouping. 

Q.8 Describe different phases of action potential in a nerve. 

Q.9 Discuss various functions of liver. 

Q.10 Name plasma proteins and their functions. 

Q.11 Describe intrinsic mechanism of blood coagulation. 

Q.12 What is reflex action? Give classification of reflexes with examples. 

Q.13 Describe mechanism of synaptic transmission.
Q.1 Explain the following:
   a) Lactose intolerance.
   b) Secondary structure of proteins.
   c) Poly unsaturated fatty acids.
   d) Rickets.
   e) Functions of calcium.
   f) Protein energy malnutrition.
   g) Urea clearance.
   h) Lipoproteins.
   i) Significance of HMP shunt path way.
   j) Bile salts.  

PART-A

Q.2 What is the normal fasting blood glucose value? How it is regulated? Explain in detail. 
Also write a note on diabetes mellitus and its complications.  
20

Q.3 a) Enumerate renal function test and describe it with clinical significances in detail.  
12
   b) Mention the clinical significance of lipid profile.  
8

Q.4 a) Explain the co-enzyme role of B-complex Vitamin with examples.  
10
   b) Explain the sources, biochemical functions and deficiency manifestation of Vitamin C.  
10

PART-B

Q.5 Describe the structure, function and different forms of RNA. Explain the differences between DNA and RNA.  
20

Q.6 What are phospholipids? How are they classified? Explain the functions of each class in detail.  
20

Q.7 Write short notes on the following:
   a) $K_m$ value and its significances.
   b) Factors affecting enzyme activity.
   c) Therapeutic uses of enzymes.
   d) Competitive inhibition.  
5x4
Q.1 Write short notes on:
   a) Juvenile delinquency.
   b) Organization.
   c) Culture change.
   d) Survey method to study social science.
   e) Alcoholism.
   f) Family.
   g) Folkways.
   h) Prostitution.
   i) Define health.
   j) Define social worker.

2x10

PART-A

Q.2 a) What is the importance of studying sociology to health care professional?
   10
   b) What is caste system? Write the features of modern cast systems.
   10

Q.3 Write various method of studying sociology and advantages and disadvantage of these methods.
   20

Q.4 What is social control? Discuss the role of norms, folk ways, customs, morals, religion and law in social control.
   20

PART-B

Q.5 a) What do you understand by urban and rural community?
   10
   b) Discuss the health hazard and causative factor of community related hazards.
   10

Q.6 What is meaning of social factors? Discuss their role in health and illness in detail.
   20

Q.7 a) What is Leisure? Discuss in detail.
   10
   b) Define social security and social legislative in relation to disabled people.
   10
End Semester Examination, May 2016  
Bachelor of Physiotherapy– First Semester  
FUNDAMENTALS OF PHYSIOTHERAPY (BPT-105)

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Define the following:  
a) Degree of freedom.  
b) Force.  
c) Archimedes principle.  
d) Potential difference.  
e) Buoyancy.  
f) Inertia.  
g) Fixators.  
h) Concentric contraction.  
i) Electromagnetic induction.  
j) Agonist.  

2×10

PART-A

Q.2 a) Describe and classify various axes and planes.  
b) Define movement. Classify movement and draw appropriate diagrams.

10  
10

Q.3 a) What do you understand by Equilibrium? Write the different factors responsible for affecting the equilibrium of the human body.  
b) Write about three types of levers with suitable examples.

10  
10

Q.4 a) Describe the properties of water.  
b) What are the different hydrostatic and hydrodynamic principles used in hydrotherapy?

10  
10

PART-B

Q.5 a) What are the various currents used in physiotherapy?  
b) Describe the capacitor in series and in parallel.

10  
10

Q.6 a) What is electromagnetic spectrum? Write the uses of each radiation.  
b) Write a short note about the precaution that need to be taken in physiotherapy OPD to prevent electric shock.

10  
10

Q.7 a) Describe and classify the thermal agents.  
b) Discuss the properties of Ultrasound waves.

10  
10

End Semester Examination, May 2016  
Bachelor of Physiotherapy – Second Semester
ANATOMY-II (BPT-201)

Time: 3 hrs.                      Max Marks: 100

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Fill in the blanks:
   a) Division of Trigeminal Nerve are __________, ___________ and _____________.
   b) Terminal Branches of facial nerve are ______________.
   c) Fourth ventricle communications to 3rd ventricle through _______________.
   d) All muscles of larynx are supplied by _____________ except ____________ which is by ________________.
   e) Thyroid gland is located at ______________ level.
   f) Cerebrum is supplied by ____________ arteries.
   g) Implantation is done at ____________ stage of development.
   h) Spinal cord terminates at ____________ level in infants.
   i) Lumbar puncture is done at _____________ space.
   j) Genotype is Klinefelters Syndrome is ______________.

PART-A

Q.2 Describe urogenital Diaphragm.  
20

Q.3 Describe Ventricles of Brain.  
20

Q.4 Describe Thyroid gland under following headings:
   a) Covering, Borders, Surfaces, Lobes.
   b) Blood supply and applied anatomy.  
20

PART-B

Q.5 Explain the following in detail:
   a) Facial Nerve Palsy.
   b) Neurogenic Bladder.  
10x2

Q.6 Explain the following:
   a) Inguinal Canal.
   b) Lateral wall of Nasal Cavity.  
10x2

Q.7 Write in detail about:
   a) Down syndrome.
   b) Implantation.  
10x2
Q.1 Answer the following:
   a) Classification of nerve fibres.
   b) Muscle tone physiology.
   c) Function of motor tract.
   d) Physiology of special sense-vision.
   e) Role of parathyroid hormone.
   f) Adrenal medulla hormone.
   g) Puberty secondary changes.
   h) Male sex hormones and their function.
   i) Pulmonary oedema.
   j) Composition of air.

\[2 \times 10\]

**PART-A**

Q.2 Explain the following:
   a) Sensory cortex.
   b) Sensory tracts.

\[10 \times 2\]

Q.3 Write an explanatory note on:
   a) Cerebral blood flow.
   b) CSF and brain metabolism.

\[10 \times 2\]

Q.4 Write notes on:
   a) Growth Hormone.
   b) Pancreatic Hormones.
   c) Control of Posture.
   d) Autonomic Nervous System Organization.

\[5 \times 4\]

**PART-B**

Q.5 a) Explain the formation of the autonomic nervous system and its function.

\[10\]

b) Hypothalamus function.

\[10\]

Q.6 a) Menstrual Cycle.
   b) Thermoregulation.
   c) Neurological Physiology of Taste.
   d) Lung Capacities.

\[5 \times 4\]

Q.7 a) Effect of exercise on Work and on other body functions.

\[10\]

b) Mountain sickness.
Q.1 a) Define Chronaxie and Rheobase.
b) What is resting membrane potential?
c) What is Sarcomere?
d) What is Nerve Accommodation?
e) Define Ramp up and Ramp down.
f) What is difference between AC and DC currents?
g) What is pulse ratio?
h) What is refractory period?
i) What is interpulse and intrapulse interval?
j) What is latency period? 2×10

PART-A

Q.2 a) Enumerate and write briefly on various electro diagnostic techniques. 10
b) Write and draw appropriate graph for complete denervation, partial and innervated in SD curve. 10

Q.3 a) What is IFT? Write its indication and contraindication in detail. 10
b) Write in brief about patient preparation and method of application for IFT. 10

Q.4 a) Write principle, indication, contraindication of faradism under pressure. 10
b) What is iontophoresis? Explain briefly technique of its application. 10

PART-B

Q.5 a) Explain types of TENS. 5
b) What is depolarization and write in detail about stages of depolarization? 5
c) Write Sunderland classification for nerve lesion. 5

Q.6 a) Explain pain gate theory. 5
b) Write physiological effect of faradic type of current. 5
c) Classify currents on the basis of their frequency. 5
d) Write various factors affecting Rheobase and Chronaxie values. 5

Q.7 a) Write about indication, electrode placement for facadiae foot bath in brief. 5
b) Write technique for stimulation of pelvic floor muscle. 5
c) How to calculate NCV for motor and sensory nerve? 5
d) What is F:G list? Write its practical implication in brief. 5
Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Answer in brief:
   a) What are the indications of free exercises?
   b) Define mobilization.
   c) Define stretching.
   d) Define passive movements.
   e) Write the self-stretching for triceps.
   f) Write the two uses of theraband in resistive exercises.
   g) Write the self-stretching for quadriceps.
   h) Write the ROM for Ankle Dorsiflexion and plantar flexion.
   i) What are uses of pulley?
   j) What are the contraindications for resistive exercises? 2×10

PART-A

Q.2 What are the principles of passive movements? Explain the indications and contraindications of passive exercises. 20

Q.3 Explain the grades of MMT in detail. Write down the positive and negative notions of MMT. 20

Q.4 Explain the determinants of stretching. Write down the precautions and contraindications of stretching in detail. 20

PART-B

Q.5 Explain delome and Mac queen techniques of resisted training in detail. 20

Q.6 What are the different types of goniometers? Explain the principle for the use of a goniometer. 20

Q.7 Explain the principles of resistive exercises. Explain in detail the indications, precautions and contraindications for resistive exercises. 20

End Semester Examination, May 2016
Bachelor of Physiotherapy – Second Semester
ENVIRONMENTAL STUDIES (BPT-205)

Time: 3 hrs  Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Define the following:
   a) Environmental Science.
   b) Ecosystem.
   c) Biome.
   d) Population Explosion.
   e) Global Warming. 2×5

PART-A

Q.2 What do you understand by multidisciplinary approach of environmental science? Discuss its scope and importance. 10
Q.3 What are natural resources? Describe about different renewal and non-renewal resources.  

Q.4 Write the concept and function of eco-system. Describe three types of eco-system.  

**PART-B**

Q.5 Discuss about biodiversity. Write short note on “India as a mega diversity nation”. What are the different threats to the biodiversity?  

Q.6 What do you understand by environmental pollution? Describe about different pollution and also enumerate their causes and effects on health.  

Q.7 Explain the causes and effects of population explosion.
Note: Attempt THREE questions in all; Q.1 is compulsory. Attempt ONE question from Part A and ONE question from Part B. Each question carries equal marks.

Q.1 a) Discuss SMART goals.
   b) What is holistic wellness?
   c) Define health.
   d) What is self-esteem?
   e) Define fitness.  

PART-A

Q.2 a) Define ‘goal’. How does setting ambitions help an individual to achieve success in life?  
   b) What are the effects and benefits of fitness?  

Q.3 a) Write various steps to improve your self-esteem.
   b) What is the relation between individual and society? Explain in detail.  

PART-B

Q.4 a) Explain in detail how can an individual overcome fear.
   b) What are the adverse effects of alcohol on human health?  

Q.5 a) Discuss the effect of exercise on different body systems.
   b) Discuss impact of various eating habits on health.  

End Semester Examination, May 2016
Bachelor of Physiotherapy – Second Semester
FOREIGN LANGUAGE (SPANISH) (BPT-GE-01)
Q.1 Llene los espacios con el verbo adecuado (Fill in the blanks with appropriate form of verbs).

a) Vosotros _________________muy bien. (Cantar)
b) ¿Dónde (tú) ______________ tu cumpleaños? (Celebrar)
c) Nosotros ________________ por la calle. (Andar)
d) Yo no ______________. (Fumar)
e) Ustedes __________ en Delhi. (Vivir)
f) Elena _________ la comida. (Preparar)
g) Mis amigos ____________ un regalo para mí. (Comparar)
h) Nosotras ________________ un libro. (Leer)
i) Monica _____________ la boda. (Asistir)
j) Yo ______________ en un restaurante italiano. (Comer)

1x10

Q.2 Llene los espacios con la forma adecuada de SER y ESTAR. (Fill in the blanks with the correct form of Ser and Estar)

a) Mi hermano ___________ cocinero.
b) España ____________ en Europa.
c) Mi coche ___________ nueva, pero ahora ___________ roto.
d) Yo __________ de India.
e) Monica ___________ muy triste.
f) Tú ___________ cansado.
g) Rahul ____________ en Madrid ahora.
h) Mi amiga _________ guapa.
i) Yo _________ estudiante.
j) La habitación __________ grande.

1x10

OR

Escriba la conjugación de los verbos siguientes con pronombres personales. (Write the conjugation of the following verbs with their personal pronouns):

<table>
<thead>
<tr>
<th>PRONOMBRES</th>
<th>BEBER</th>
<th>VIVIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tú</td>
<td></td>
<td></td>
</tr>
<tr>
<td>él</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nosotros</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vosotros</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10

Q.3 Traduzca las siguientes palabras en español. (Translate the following words in Spanish.)

a) See you later - ______________________________
b) Hello - ______________________________
c) Good morning- ______________________________
d) Good night- ______________________________
e) How are you? - ____________________________

Q.4 Escriba los números en español. (Write the numbers in Spanish)
  a) 11 ___________________
  b) 0 - ____________________
  c) 25- ____________________
  d) 100- ___________________
  e) 2- ____________________

Q.5 Complete the following table with adequate nationality or country name:

<table>
<thead>
<tr>
<th>País</th>
<th>Masculino</th>
<th>Femenino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>españa</td>
<td></td>
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</tr>
<tr>
<td>Argentina</td>
<td></td>
<td>India</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q.6 Responda a las siguientes preguntas. (Answer the following questions)
  a) ¿Cuántos años tienes?
  b) ¿Cómo te llamas?
  c) ¿De dónde es?
  d) ¿Qué tal?
  e) ¿Dónde vives?

Q.7 Coincidir con las siguientes palabras. (Match the following words)
  a) Grandparents             i) Enero
  b) January              ii) Jueves
  c) Médico              iii) Abuelos
  d) Thursday             iv) Doctor
  e) Brother             v) Hermano
  a___ /b___ / c___ /d___ /e___
Q.1 Describe the concept of health and health promotion. How the study of health promotion help the students to apply health promotion strategic planning and evaluation particularly in the work place? 10

PART-A
Q.2 Explain in detail various features of Ottawa Charter of health promotion. 10

Q.3 Define attitude. Why attitudinal change is important in the successful completion of any health promotion program? 10

Q.4 Write short notes on:
   a) Determinants of health.  
   b) Goals of health promotion. 5×2

PART-B
Q.5 Explain in detail the model of health promotion with suitable examples. 10

Q.6 Explain the steps in intervention and promotion of oral health program. 10

Q.7 Write short notes on:
   a) Health Education.  
   b) Communication. 5×2
M. Sc. (N & D) - First Semester
BIOCHEMISTRY (MN&D-101)

Time: 3 hrs                   Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any Two questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Explain the following:
a) Non-competitive inhibition.
b) Composition of blood.
c) Thyroid hormones.
d) Glycolysis.
e) Nucleic acids.

4x5

PART-A

Q.2 Explain the mechanism of enzyme action in detail.

20

Q.3 a) Classify proteins on the basis of structure.

10

b) Why HMP shunt is known as “A unique multifunctional pathway”?

10

Q.4 What is hemoglobin? Explain its structure in detail.

20

PART-B

Q.5 Write short notes on the following:
a) Ketone bodies.
b) Disaccharides.
c) Digestion of proteins.
d) Trace elements.

5x4

Q.6 a) Explain beta-oxidation of fatty acids in detail.

10

b) Explain the biosynthesis of nucleotides by de-novo and salvage pathways.

10

Q.7 Discuss the following:
a) Biochemical functions of fat soluble vitamins.

10

b) Biochemical functions of micro minerals.

10
End Semester Examination, May 2016
M. Sc. (N & D) – First Semester
PHYSIOLOGY (MN&D-102)

Time: 3 hrs                   Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any Two questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Explain how nutrition plays an important role in performing different physiological function of the body.
20

PART-A

Q.2 Explain the following:
   a) Any four cell organelles.
   b) Diffusion and osmosis.
   c) Functions of WBC and RBC.
   d) Structure and function of platelets.
       5x4

Q.3 a) Explain the process of fate of carbohydrate, proteins and fats in the gastrointestinal tract.
    10
    b) Explain the function of pancreatic juice and bile in detail.
    10

Q.4 a) Explain autonomic nervous system in details.
    10
    b) Write a note on ECG and CSF.
    10

PART-B

Q.5 Explain the mechanism of respiration in detail.
20

Q.6 a) Describe the structure and function of the heart in detail.
    10
    b) What is hypertension? Explain the factors affecting hypertension in brief.
    10

Q.7 Discuss the mechanism of urine formation with emphasis on GFR.
20
End Semester Examination, May 2016
M. Sc. (N & D) – First Semester
FOOD AND NUTRITION (MN&D-103)

Time: 3 hrs                   Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any Two questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Explain the dietary guidelines for infant, pre-schooler and adult. Enlist the nutritional changes during pregnancy and lactation.
20

PART-A

Q.2 List the reasons for cooking food. Explain how water, air and oil can serve as a medium of cooking with adequate examples.
20

Q.3 What are food choices? Explain the factors affecting it. How are your food choices affected due to your family and geographical lactation?
20

Q.4 What is BMR? What are the factors affecting it? What are different methods to estimate BMR?
20

PART-B

Q.5 Define the following:
a) Respiratory quotient.
b) Thermic effect of food.
c) Hunger and appetite.
d) Placenta.
e) Food Choices.
Q.6  
a) Write the name of the cooking method against the medium of cooking:

<table>
<thead>
<tr>
<th>Medium</th>
<th>Name of cooking method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Water</td>
<td>________, ________ and ________</td>
</tr>
<tr>
<td>ii) Steam</td>
<td>________ and ________</td>
</tr>
<tr>
<td>iii) Fat</td>
<td>________ and ________</td>
</tr>
<tr>
<td>iv) Air</td>
<td>________ and ________</td>
</tr>
</tbody>
</table>

b) Write short notes on:
   i) Solar cooking.
   ii) Microwave cooking.
   iii) Advantages of cooking.
   iv) Pressure cooking.
   v) Photochemical.

Q.7  
Explain the history of nutrition. Explain in detail the nutrition research in India.
End Semester Examination, May 2016
M. Sc. (N & D) – First Semester
NUTRITION FOR VULNERABLE AND SPECIAL GROUP (MN&D-104)

Time: 3 hrs                   Max Marks:  100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Describe the principles involved in nutritionally adequate meal planning and their allied aspects.
   20

PART-A

Q.2 Write short notes on (any four):
   a) Compare nutritive value of cow milk, buffalo milk and breast milk.
   b) Food groups.
   c) Micro nutrients.
   d) Edible portion of food.
   e) Differentiate between portion size and serving size.          5x4

Q.3 What are recommended dietary allowances, their uses and limitations? Describe the principles of deriving RDA.
   20

Q.4 Describe physiological and psycho-social changes during adolescent period and explain their nutritional needs and recommended dietary allowances in detail.
   20

PART-B

Q.5 Write short notes on (any four):
   a) Osteoporosis.
   b) Nutritional requirement for a space person.
   c) Anemia during pregnancy and its management.
   d) Nutritional requirements during lactation.
e) Importance of mother milk.

Q.6 Describe the changes associated with aging. Explain the recommended dietary allowances for an elderly person.

Q.7 Write short notes on:
   a) Nutritional requirement for an industrial worker.
   b) Diet and feeding pattern of an adult man.
Q.7 What is fermentation? Discuss any two products of fermentation in detail.

10
Q.5 Write a brief note on benefits of functional foods in Indian diet along with their sources.  
10

Q.6 Briefly discuss the development process of functional foods.  
10

Q.7 Explain standards for health claims in regard with functional foods.  
10

End Semester Examination, May 2016  
M. Sc. (N & D) – Second Semester  
STATISTICS AND RESEARCH METHODOLOGY (MN&D-201)

Time: 3 hrs  
Max Marks: 50  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Explain the role of mean and standard deviation in a research interpretation and analysis of a study.  
10

PART-A

Q.2 Calculate the value of mean and mode from the following distribution.

<table>
<thead>
<tr>
<th>Rent (in `)</th>
<th>No. of Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 25</td>
<td>8</td>
</tr>
<tr>
<td>25 – 35</td>
<td>10</td>
</tr>
<tr>
<td>35 – 45</td>
<td>15</td>
</tr>
<tr>
<td>45 – 55</td>
<td>25</td>
</tr>
</tbody>
</table>
Q.3 Explain the following:
   a) Purpose of a research design.
   b) Methods involved in a research design.  

Q.4 What do you mean by sampling? Discuss the various types of probability sampling.  

**PART-B**

Q.5 Two different types of diet A and B were tried on underweight patients. For a random sample of 10 people, fed on type A diet and 12 people on type B diet. The increases in weight in pounds in a certain period were:

<table>
<thead>
<tr>
<th>Diet A</th>
<th>Diet B</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>16</td>
<td>22</td>
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<td>15</td>
<td>21</td>
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<td>9</td>
<td>23</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

Test whether the diet A and B differ significantly as regards their effect on increase in weight.  

Q.6 Explain the level of significance critical region, one tail and two tail tests.  

Q.7 What are the requirement of sample size calculation for a research?  

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**End Semester Examination, May 2016**

M. Sc. (N & D) – Second Semester

**INSTRUMENTATION FOR FOOD ANALYSIS (MN&D-203)**

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Explain the working principle of the following:
   a) Spectrophotometer.
   b) ELISA.
   c) Calorimeter.
   d) Radioactive isotopes.  

**PART-A**

Q.2 a) Differentiate between the working principle of photometry and flourimetry.  
   b) Discuss the application of flourimetry.  

Q.3 Discuss the applications of following:
   a) GLC.
b) RIA.
c) Bomb colorimetry.
d) Electrophoresis.

Q.4 a) What do you understand by dissociation of weak acids? Explain.
b) How is Bomb colorimetry useful in analyzing heat of combustion?

PART-B

Q.5 a) Discuss the working principle of HPLC technique in detail.
b) How is HPLC different from GLC technique?

Q.6 Explain the following:
a) NMR.
b) pH meter.
c) Formation of buffers.
d) Colorimetry.

Q.7 Explain the working of atomic absorption spectrophotometry along with its applications.
PART-B

Q.5 Describe the pathophysiology of atherosclerosis, their symptoms, etiological factors and its management in detail.  
20

Q.6 Discuss the physiological mechanism that regulate blood glucose in the body. How are these disturbed in diabetes and what are their metabolic implication?  
20

Q.7 Write short notes on:
   a) Dietary and feeding pattern of overweight.
   b) Metabolic charges during fever.
   c) Lipoproteins.
   d) Renin-angiotensin system during hypertension.  
5×4

End Semester Examination, May 2016
M. Sc. (N & D) – Second Semester
INSTITUTIONAL FOOD ADMINISTRATION (MN&D-207)

Time: 3 hrs  
Max Marks: 50  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 What is the relationship between management and entrepreneurship as a field? Explain.  
10

PART-A

Q.2 Explain the principles of management.  
10

Q.3 What are the size and types of kitchen used by food service organizations?  
10

Q.4 What are the different purchasing methods for buying equipments?  
10

PART-B
Q.5 What do you mean by menu planning? What are the types of menu? Explain them in detail.  

Q.6 Write a note on marketing the products of catering.  

Q.7 Define the following:  
   a) Absenteeism.  
   b) Employee turnover.  
   c) Costing.  
   d) Budgeting.  

**End Semester Examination, May 2016**  
M. Sc. (N & D) – Second Semester  
GERIATRIC NUTRITION (MN&D-208)  

Time: 3 hrs  
Max Marks: 50  
No. of pages: 1  

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.  

Q.1 What do you mean by multifaceted aspects of aging? How you become competent to provide nutritional and health care of the elderly?  

**PART-A**  

Q.2 What is geriatric care? Explain the demography, philosophy and scope of geriatrics and geriatric medicine in brief.  

Q.3 What is biology of aging? Explain the theories of aging in detail.  

Q.4 Discuss in brief the factors influencing the food and nutrition intake of elderly.  

**PART-B**  

Q.5 How can one assess the health and nutritional status of elderly? Explain the effect of life style pattern, medication and psychological aspects of aging.  

Q.6 Give the name of chronic degenerative diseases and nutritional problems generally seen in elderly. Discuss the management, prevention and control of nutritional problems arises during elderly stage.  

Q.7 Discuss the role of National and International agencies working for welfare of elderly. Explain the role of each agency in shaping the future of health care of geriatrics.
End Semester Examination, May 2016
M. Sc. (N & D) – First Semester
TEACHING IN NUTRITION SCIENCE (MN&D-GE-01)

Time: 3 hrs                   Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 “The scope of nutrition science is wide, the theme is the present social life of man, the world over” Discuss. 10

PART-A

Q.2 Differentiate between:
a) Formal and informal education. 5
b) Teaching and learning. 5

Q.3 What should be the aims of good education in the light of the existing social and economic conditions of our country? 10

Q.4 Why should the curriculum of nutrition science be frequently revised? Discuss some of the factors, which should be considered in selecting material for the nutrition science curriculum. 10
**PART-B**

Q.5 Describe the various methods for teaching nutrition science. Explain which one is the best and why? 
10

Q.6 Define evaluation. Explain the need and importance of evaluation with suitable examples. 
10

Q.7 Write short notes on:
   a) Problem solving method. 
   b) Importance of projected and non-projected teaching aids. 
5 5

**End Semester Examination, May 2016**

M. Sc. (N & D) – First Semester

FOOD LAWS AND FOOD SAFETY (MN&D-GE-02)

Time: 3 hrs                   Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part-A and TWO questions from Part-B. Each question carries equal marks.

Q.1 Discuss the concept of food safety in food industries. 
10

**PART-A**

Q.2 Write a note on current challenges to food safety. 
10

Q.3 Discuss methods of evaluation of food adulterants in any five food items. 
10

Q.4 Write a note on HACCP in food safety. 
10

**PART-B**

Q.5 Discuss in detail the role of international agencies in food safety. 
10
Q.6 Write short notes on:
a) Agricultural Produce Act, 1937.

5x2

Q.7 Discuss regulation of food labeling with respect to India.

10
End Semester Examination, May 2016
M. Sc. (N & D) – Second Semester
HOSPITAL ADMINISTRATION (MN&D-GE-04)

Time: 3 hrs
Max Marks: 50
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Explain in detail how the study of hospital administration helps the students to understand and apply resource management concepts, the processes and strategies needed in specific hospital sector.

Q.2 Explain in detail 14-principles of management as stated by Henry Fayol.

Q.3 Write short notes on:
   a) Contribution of F.W. Taylor.
   b) Functions of manager.
   c) Principles of directing.

PART-B
Q.5 Explain the metabolic consequences of diabetes.
Q.6 Write down the role of food and nutrients in the prevention of bone and muscles loss.
Q.7 Explain the emerging methods of nutritional surveillance in detail.
Q.4 Define communication. Explain in detail barriers to effective communication.  

PART-B  

Q.5 Explain the term personality and types of personalities according to modern classification of personality.  

Q.6 Define leadership. Explain any one theory of leadership in detail:  
   a) Trait theory.  
   b) Behavioural theory.  
   c) Contigency theory.  

Q.7 Write short notes on:  
   a) Types of groups.  
   b) Types of teams.  
   c) Effective listening.  
   d) Characteristics of communication.  
   e) Emotions.  

2×5

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End Semester Examination, May 2016  
M. Sc. (N & D) – Third Semester  
PUBLIC HEALTH NUTRITION (MNC-301)

Time: 3 hrs  
Max Marks: 60  
No. of pages: 1  

Note: Attempt any THREE questions from Part A and SIX questions from Part B.  

PART-A  

Q.1 What are the essential skills and knowledge required for public health nutrition practices?  

Q.2 Discuss any two community health planning models in detail.  

Q.3 Explain the policy making strategies in detail.  

Q.4 Discuss the nutrition care through the public health teams.  

PART-B  

Q.5 Name any five public health nutrition problems prevalent in India.  

Q.6 What are the dietary goals given for Indians?
Q.7 Discuss the importance of policies.  
Q.8 How the data can be collected by public health nutritionists?  
Q.9 What are the discouraging trends that impact the public health?  
Q.10 Explain how the nutritionist helps in improving the public health.  
Q.11 What are the ethical issues in public health nutrition?

End Semester Examination, May 2016
M. Sc. (N & D) – Third Semester
INSTITUTIONAL FOOD MANAGEMENT (MNC-302)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part A and SIX questions from Part B.

PART-A
Q.1 Explain the tools of management?  
Q.2 Write a short note on menu planning.  
Q.3 Describe the functions of management.  
Q.4 Discuss the concept of work simplification.  

PART-B
Q.5 What are the different purchasing methods for buying of equipments?  
Q.6 Describe the methods used for inventory management.
Q.7 Explain the different food production systems. 5

Q.8 Explain the different styles of service of food in a catering establishment. 5

Q.9 Describe the cost components involved in a food service. 5

Q.10 Describe conventional accounting techniques. 5

Q.11 Write a note on staff turnover. 5

End Semester Examination, May 2016  
M. Sc. (N & D) – Third Semester  
NUTRITION RELATED DISORDERS (MNC-303)

Time: 3 hrs  
Max Marks: 60

No. of pages: 1

Note: Attempt any THREE questions from Part A and SIX questions from Part B.

**PART-A**

Q.1 What are the transmitted routes of AIDS? Explain the nutritional management for an AIDS patient. 10

Q.2 What do you mean by enborn errors of metabolism? Explain any two metabolic disorders with their clinical symptoms and management. 10

Q.3 Discuss the etiology, clinical symptoms and dietary management of any two malabsorption syndrome. 10

Q.4 What are food allergies? Explain the clinical features and treatment of food allergies. 10

**PART-B**

Q.5 Discuss the nutritional care for a cancer patient. 5

Q.6 Explain the nutritional therapy adopted for a chronic alcoholic patient. 5
Q.7 Disabling disease - Rheumatide Arthritis and Supportive nutritional care, explain. 5
Q.8 What are the special needs of older disabled person suffering from osteoarthritis? 5
Q.9 Discuss the nutritional care of terminally ill patients. 5
Q.10 Discuss the various stages of aging process. 5
Q.11 Write a short note on Palliative vs Curative care. 5

End Semester Examination, May 2016
M. Sc. (N & D) - Fourth Semester
MANAGEMENT OF NUTRITION PROGRAMMES (MNC-401)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A
Q.1 Develop a programme for anaemic women and illustrate all the steps in detailed. 10
Q.2 Write down the merits, demerits and lacunas of mid-day meal programme. 10
Q.3 Explain health care system in India. 10
Q.4 Draw and discuss the Sussman’s four step model of programme development. 10

PART-B
Q.5 Explain need based approach for programme planning. 5
Q.6 Explain the steps involve in implementation of programmes. 5
Q.7 Describe existing nutritional programme for adolescents girls in India.  
Q.8 Discuss financial management of nutrition related programme in brief.  
Q.9 Write down the various levels of programme planning.  
Q.10 Explain scope, focus and criteria of programme evaluation.  
Q.11 Discuss the following terms (any two):  
   a) Monitoring.  
   b) Right-based approach.  
   c) MIS in planning and monitoring of nutrition programme.  

End Semester Examination, May 2016  
M. Sc. (N & D) - Fourth Semester  
NUTRITION IN EMERGENCIES AND DISASTERS (MNC-402)  

Time: 3 hrs                                      Max Marks:  60  
Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.  

PART-A  
Q.1 What are the natural disasters which create emergency situations? Explain any one  
situation in detail using case studies from the Indian subcontinent.  
10  
Q.2 Write about the major deficiency diseases and their management in emergency  
situations.  
10  
Q.3 Write in detail about prevention, treatment and control of communicable diseases.  
10  
Q.4 Discuss public nutrition approach to tackle nutritional problems in emergencies.  
10  

PART-B
Q.5 Explain the causes of malnutrition in emergency situations.

Q.6 Write a short note on protein energy malnutrition and its management in disasters.

Q.7 Explain the anthropometric assessment of nutritional status.

Q.8 What is the process of local food rehabilitation?

Q.9 How do we manage mass feeding at feeding centers?

Q.10 How will you assess food needs in emergency situation?

Q.11 Discuss food security and nutrition in emergencies in brief.

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**End Semester Examination, May 2016**

M. Sc. (N & D) - Fourth Semester

**ADVANCES IN NUTRITIONAL BIOCHEMISTRY (MNC-403)**

Time: 3 hrs  Max Marks: 60

No. of pages: 1

Note: Attempt any THREE questions from **Part-A** and SIX questions from **Part-B**.

---

**PART-A**

Q.1 Explain the process of protein digestion in the body.

10

Q.2 Give details of different phases of detoxification.

10

Q.3 What do you mean by recombinant DNA technology? Explain its applications in the field of nutritional science.

10

Q.4 Write in detail about the metabolic changes that take place in the body due to fasting.

10

---

**PART-B**
Q.5 What are different specialized functions of hepatocyes?  
Q.6 What are biochemical functions of hemoglobin?  
Q.7 How does secretion of bile takes place from liver?  
Q.8 What is the mechanism of regulation of gene expression?  
Q.9 What do you understand by ketosis?  
Q.10 What is the mechanism of glucose absorption in the body?  
Q.11 Why is carbohydrate a major substrate for respiration?

End Semester Examination, May 2016  
M. Sc. (N & D) - First Semester  
ADVANCED NUTRITIONAL BIOCHEMISTRY (MND-101)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

**PART-A**

Q.1 Tabulate the sources, biochemical role and deficiency disorders related to various minerals in humans.  
10

Q.2 Explain the oxidation of fatty acids in human body.  
10

Q.3 Define enzymes. Give the general characteristics and kinetics of enzyme action.  
10

Q.4 Define and classify proteins. Also, with the help of a well-labeled diagram, explain the absorption of proteins.  
10

**PART-B**
Q.5 What are nucleic acids? Differentiate between DNA and RNA. 5

Q.6 Write short notes on:
   a) Lock and key hypothesis.
   b) Non-competitive inhibition. 2½x2

Q.7 With the help of a diagram, explain the action of glucocorticoid hormone. 5

Q.8 Give the structure and function of hemoglobin. 5

Q.9 Write a short note on water insoluble vitamins. 5

Q.10 Write the structure of following:
   a) ATP.
   b) Lecithin. 2½x2

Q.11 What are essential amino acids? Give the structure of any three. 5

End Semester Examination, May 2016
M. Sc. (N & D) - First Semester
ADVANCED HUMAN PHYSIOLOGY (MND-102)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Explain the active transport processes in detail. 10

Q.2 Describe the functions of pancreas, liver and gall bladder in detail. 10

Q.3 Describe the mechanism of urine formation in detail. 10

Q.4 Explain the basic properties of heart with suitable diagrams. 10

PART-B
Q.5 What are blood groups? What are the methods of determining blood groups? 5

Q.6 Define:
a) Hypertension  
b) Anaemia  
c) Diagram of nephron  
d) Cardiac output  
e) Cerebrospinal fluid  
1x5

Q.7 Write a short note on physiology of vision. 5

Q.8 What are the basic properties of nerves and receptor organs? 5

Q.9 What are the functions of the following?
a) WBC  
b) Platelets  
2½x2

Q.10 What are functional complexes? 5

Q.11 Explain the mechanism of uptake and delivery of respiratory gases. 5

End Semester Examination, May 2016
M.Sc. (N & D) - Second Semester
FOOD MICROBIOLOGY (MND-201)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Explain the role of microbiology in water and food product sanitation. 10

Q.2 Describe morphology and structure of prokaryotic and eukaryotic cells. 10

Q.3 What do you mean by SCP? List the various advantages of SCP over conventional sources of protein. 10
Q.4 What are the various types of food borne diseases? Discuss any one specific food borne infection in detail.

10

PART-B

Q.5 Discuss ALAGE.

5

Q.6 Write a note on the classification of microorganisms.

5

Q.7 Describe the spoilage of wines and beers.

5

Q.8 Differentiate between a prokaryotic and a eukaryotic cell. Support your answer using relevant diagrams.

5

Q.9 Write a note on indicators of food microbial quality and safety.

5

Q.10 Explain HACCP.

5

Q.11 Write short notes on (any two):
   a) Bacteria.
   b) Fungi.
   c) Algae.

$2\frac{1}{2} \times 2$

End Semester Examination, May 2016
M. Sc. (N & D) - Second Semester
INSTRUMENTATION FOR FOOD ANALYSIS (MND-202)

Time: 3 hrs          Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Discuss the working principle of photometer in detail.

10

Q.2 Differentiate between paper chromatography and gel chromatography.

10
Q.3 Explain the role of various parts of spectrophotometer in its working.  
10

Q.4 Explain the working principle of bomb calorimeter along with its applications.  
10

**PART-B**

Q.5 Define the following:  
a) Buffers  
b) Salts  
5

Q.6 Briefly discuss the applications of HPLC technique in the field of medical science.  
5

Q.7 How is dissociation of weak acids takes place?  
5

Q.8 Elaborate upon the role of atomizers in atomic absorption spectrophotometer.  
5

Q.9 How does pH meter works?  
5

Q.10 What is the working principle of electrophoresis?  
5

Q.11 Briefly explain the Ostwald’s theory of indicators.  
5
Q.4 What nutritional modification done in the patient’s diet suffering from type I diabetes mellitus? 10

**PART-B**

Q.5 Plan a diet modification for a patient suffering from obesity. 5

Q.6 What are the do’s and don’ts for the patient suffering from peptic user? 5

Q.7 Explain any one of the following metabolic disorder:
   a) Gout.
   b) Rheumatoid Arthritis. 2½×2

Q.8 Describe the therapeutic adaptations of a normal diet. 5

Q.9 Explain the process of atherosclerosis. 5

Q.10 Discuss the diet management for the patient suffering from nephritis. 5

Q.11 Write a short note on nutrient and drug interaction. 5

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**End Semester Examination, May 2016**

M. Sc. (N & D) – Second Semester

**STATISTICS AND RESEARCH METHODOLOGY (MND-205)**

Time: 3 hrs  Max Marks: 60

Note: Attempt any **THREE** questions **Part A** and **SIX** questions from **Part B**.

**PART-A**

Q.1 Consider the following distribution:

<table>
<thead>
<tr>
<th>$x$</th>
<th>0-10</th>
<th>10-20</th>
<th>20-30</th>
<th>30-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>$f$</td>
<td>12</td>
<td>18</td>
<td>20</td>
<td>25</td>
</tr>
</tbody>
</table>

Compute mean, median and mode. 10

Q.2 What is sampling? Explain any four sampling methods in detail. 10
Q.3 Enlist different methods of collecting data. Discuss questionnaires and schedules in detail. 10

Q.4 Eight coins were tossed 256 times and the following results were obtained:

<table>
<thead>
<tr>
<th>No. of heads</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>8</th>
</tr>
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<tbody>
<tr>
<td>Frequency</td>
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<td>30</td>
<td>52</td>
<td>67</td>
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<td>1</td>
</tr>
</tbody>
</table>

Are the coins biased? Use $x^2$ test. 10

PART-B

Q.5 Describe the layout of a research report covering all relevant points. 5

Q.6 Write short notes on:
   a) Coefficient of association.
   b) Correlation and Regression. 2½×2

Q.7 Define the following:
   a) Mean.
   b) Random experiment.
   c) Mode.
   d) Skewness.
   e) Standard deviation. 1×5

Q.8 Explain hypothesis and its characteristics in brief. 5

Q.9 Discuss analysis of variance in brief. 5

Q.10 Define ‘research problem.’ Illustrate your answer with two examples. 5

Q.11 The number of passengers travelling by Boeing 747 from one city to another in one week:
   320, 290, 265, 300, 270, 200, 315
   Calculate mean and standard deviation. 5

End Semester Examination, May 2016
M. Sc. (N & D) – Second Semester
NUTRITION RELATED DISORDERS (MNDC-206)

Time: 3 hrs  Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 A male who is 38 year old suffering from oral cancer. His height is 168 cm, weight 42 kg. He is vegetarian and sedentary worker. What steps are to be kept in mind while giving the nutritional assessment case to the patients? 20

PART-A

Q.2 Write down the pathophysiology of HIV/AIDS patients including nutritional care of the patients. 20
Q.3 Define celiac disease and its dietary management?  

Q.4 Explain chronic alcoholism complication and what are the steps to be kept in mind while giving nutritional therapy to patients?

PART-B
Q.5 Explain clinical symptoms of gout and its dietary management.  
Q.6 Discuss dying process and nutritional care for symptoms control.  
Q.7 Explain pathophysiology of food allergies and its dietary management.

End Semester Examination, May 2016  
M. Sc. (N & D) – Second Semester  
FOOD SCIENCE AND PROCESSING (MNDF-206)

Time: 3 hrs Max Marks: 100  
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Discuss various components of food industry which affect their activities. How allied industries are related to food industry? Explain.  

PART-A
Q.2 a) Discuss the wheat milling process with the help of a flowchart.  
b) Explain the structure of rice along its nutritive value.

Q.3 a) How is market milk processed? Explain in detail.  
b) Explain the following:
Q.4 a) Differentiate between enzymatic and non-enzymatic browning reactions.  
   b) Enlist the pigments present in fruits and vegetables. How processing affect the 
      colour of vegetables?

   PART-B

Q.5 a) How can one judge the quality of fresh eggs? Explain.  
   b) Define the following:  
      i) Ageing of meat.  
      ii) Tenderization of meat.

Q.6 a) Discuss the following:  
      i) Artificial sweeteners.  
      ii) Hydrogenation.  
      iii) Role of sugar in cookery.  
      iv) Food adulteration.

Q.7 a) What are various food hazards? Explain in detail.  
   b) Discuss any two food packaging materials used for packing of processed foods.
Q.4 Define epidemiology. Write down the aim and uses of descriptive epidemiology.  

**PART-B**

Q.5 Explain the role of public health nutritionist in national development.  

Q.6 Write short notes on:  
   a) Vitamin A deficiency and its management.  
   b) Iodine deficiency and its management.  

Q.7 Describe the preventive strategies and implications of following:  
   a) Diabetes.  
   b) Obesity.  

End Semester Examination, May 2016  
M. Sc. (N & D) – Second Semester  
NUTRITION ESSENTIALS OF SPORTS (MNDS-206)

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1  

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory**. Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B**. Each question carries equal marks.

Q.1 Discuss the role of nutrition in sports.  

**PART-A**

Q.2 Discuss the biological functions of the following:  
   a) Fat soluble vitamins.  
   b) Minerals.  

Q.3 a) Explain the factors which affect gastric emptying.  
   b) What are the recommended guidelines for oral rehydration therapy?  

Q.4 a) Explain the components of female athlete triad.
b) Discuss the principles, recommendations and considerations for weight loss in sport.  

**PART-B**

Q.5 Explain the role of physical activity in weight control.  

Q.6 Write short notes on:
   a) Anabolic steroids.
   b) Human Growth Hormone.
   c) Carbonate loading.
   d) Caffeine.  $5 \times 4$

Q.7 Write short notes on:
   a) Energy Bars.
   b) Dietary supplements.
   c) Multivitamins.
   d) Body building supplements.  $5 \times 4$
PART-B
Q.5 Write a short note on processing of cheese. 5
Q.6 Explain the five legume technologies. 5
Q.7 Differentiate between the following and also write two differences of each:
   a) Goitrogens and antivitamine factor.
   b) Bag storage and bulk storage.
   c) Quick looking rice and parboiled rice.
   d) Airtight storage and bulk storage.
   e) Ultra low temperature drying and ultra high conduction drying. 1×5
Q.8 Complete the following sentences:
   a) Amylase inhibitors are __________.
   b) Field storage are __________.
   c) In controlled atmosphere storage __________.
   d) Degreening is __________.
   e) Pasteurization is __________. 1×5
Q.9 Explain the extraction of oil from oil seeds. 5
Q.10 Explain cooperative dairying. 5
Q.11 Define the following aspects of dairy technology:
   a) Homogenization.
   b) Emulsification.
   c) Stabilizers.
   d) Recombination.
   e) Standardization. 1×5
Q.7 How does various microscopic examination help in objective evaluation of foods? 5
Q.8 Briefly discuss the functions of food packaging. 5
Q.9 Explain haemagglutinins effect in food in brief. 5
Q.10 Which instrument is used in rheological evaluation of dough? Explain. 5
Q.11 Explain HACCP. 5

End Semester Examination, May 2016
M. Sc. (N & D) – Third Semester
FOOD PRODUCT DEVELOPMENT AND MARKETING (MNF-303)

Time: 3 hrs Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part A and SIX questions from Part B.

PART-A

Q.1 What are the phases involved in the food product development? 10
Q.2 Explain the methods of sensory evaluation conducted for a new product. 10
Q.3 What is a new product development? Explain its classification in detail. 10
Q.4 Describe thermal processing in detail. 10

PART-B

Q.5 Explain CAP/MAP in detail. 5
Q.6 Describe the new product labeling in brief. 5
Q.7 What is test marketing? 5
Q.8 Explain the life cycle of a new product.  

Q.9 Write a short note on food spoilage.  

Q.10 What are the objectives and criteria for screening of a new product?  

Q.11 What are the internal and external sources of an idea for generation of a new product?
Q.7 Describe the immobilized enzymes and how it is useful for food industry.  
Q.8 Explain the properties of amylose and amylopection.  
Q.9 Discuss the flavanoids in detail.  
Q.10 Explain the effect of frying on properties of lipids.  
Q.11 Give a brief note on food colour present in plant origin food items.

End Semester Examination, May 2016  
M. Sc. (N & D) – Fourth Semester  
ADVANCED FOOD PROCESSING AND TECHNOLOGY (MNF-402)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part A and any SIX questions from Part B.

PART-A

Q.1 Explain the preservation by thermal processing.  
Q.2 Discuss physiological and biochemical changes during ripening of fruits and vegetables.

Q.3 Define the following:  
a) Chelating agents.  
b) Sweetness.  
c) Fat replacers.  
d) Clarifying agents.  
e) Anticaking agents.  

Q.4 Discuss preservation of meat and fish products in detail.

PART-B
Q.5 Write a note on fermentation technology.  

Q.6 Explain the following:  
a) Dehydrated milk products.  
b) Sausages and salami.  

Q.7 Describe potato processing in brief.  

Q.8 Discuss the preservation by sugar and smoke.  

Q.9 Describe the following:  
a) Margarine.  
b) Mayonnaise.  

Q.10 Discuss rice based instant foods in brief.  

Q.11 Explain processing of spices in brief.  

End Semester Examination, May 2016  
M. Sc. (N & D) – Fourth Semester  
MICROBIOLOGY OF FOOD PROCESSING (MNF-403)  

Time: 3 hrs  
Max Marks: 60  
No. of pages: 1  

Note: Attempt any THREE questions from Part A and any SIX questions from Part B.  

PART-A  
Q.1 Explain microbial flora of human body in detail.  

Q.2 What is cold storage? Describe the requirements of refrigeration storage.  

Q.3 Illustrate the steps of survey of food born disease outbreak with an example.  

Q.4 Describe the changes occur during rigor mortis of meat. Discuss the microbial biota of meat and poultry.  

PART-B  
Q.5 Enlist the health benefits of fermented products.  

Q.6 Explain “canning – a method of food preservation”.  

Q.7 What do you mean by food spoilage? Give the classification and factors affecting growth of microbes.
Q.8 Enumerate different types of freezing methods? Explain any one in detail. 5
Q.9 Explain various methods involved in sewage disposal. 5
Q.10 Explain the problems of packaging and marketing of food products in brief. 5
Q.11 What are the methods used for curing of meat? 5

End Semester Examination, May 2016
M. Sc. (N & D) – Third Semester
EXERCISE PHYSIOLOGY (MNS-301)

Time: 3 hrs Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part A and SIX questions from Part B.

**PART-A**

Q.1 Discuss the meaning, scope and importance of exercise physiology in games and sports. 10
Q.2 Explain the mechanism of ventilation. 10
Q.3 Discuss long term adjustments to altitude. 10
Q.4 What is hypertension? How does regular exercise affect it? 10

**PART-B**

Q.5 Write a short note on varicose veins. 5
Q.6 What are the physiological changes that occurs in the body during exercise in heat? 5
Q.7 Explain the sliding-filament theory in brief. 5
Q.8 How exercise helps in successful ageing? 5
Q.9 Write the types of muscle contraction in games and sports.  
Q.10 Discuss the long term and short term planning for training.  
Q.11 Write the modified Harvard step test.  

Q.9 Write the types of muscle contraction in games and sports.  
Q.10 Discuss the long term and short term planning for training.  
Q.11 Write the modified Harvard step test.  

End Semester Examination, May 2016  
M. Sc. (N & D) - Third Semester  
SPORTS BIOCHEMISTRY (MNS-302)  

Time: 3 hrs                   Max Marks: 60  
No. of pages: 1  
Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.  

PART-A  
Q.1 Explain the role of protein and amino metabolism in relation to sports and exercise.  
10  
Q.2 Explain the role of neurotransmitters in metabolic regulation during sports and exercise.  
10  
Q.3 Discuss the relationship between neuroendocrine system and fatigue.  
10  
Q.4 What is the effect of environment and dehydration on exercise performance? Explain post-exercise rehydration.  
10  

PART-B  
Q.5 What do you mean by catabolic and anabolic reactions?  
5
Q.6 How is energy production regulated in high intensity exercise?  
Q.7 What do you understand by central fatigue? Explain.  
Q.8 Briefly explain the role of fluid replacement during exercise.  
Q.9 What is the relevance of carbohydrates in sports?  
Q.10 How does fatigue occur during exercise?  
Q.11 Write a short note on thermoregulation.

End Semester Examination, May 2016
M. Sc. (N & D) – Third Semester
SPORTS BIOCHEMISTRY (MNS-302)

Time: 3 hrs Max Marks: 60
No. of pages: 1
Note: Attempt any THREE questions from Part A and SIX questions from Part B.

PART-A
Q.1 Explain the effect of nutritional status on sports.  
Q.2 Discuss the hormonal regulation of sports.  
Q.3 What is the note of micronutrients sports? List as many as you can.  
Q.4 What are the factors limiting aerobic performances in sports.

PART-B
Q.5 Explain the effects of exercise and coater balance of sports.  
Q.6 Fill in the blanks and complete the sentence:
   a) The loss of 1% body weight due to dehydration causes ________.
   b) The loss of 2% body weight due to dehydration causes ________, and loss of 3% ________, 4% loss due to dehydration cause ________ at 5% ________.
Q.7 Explain the factors increasing heat illness.
Q.8  What are fluid replacement beverages? Give examples.  5

Q.9  Explain the note of carbohydrate on sports.  5

Q.10  Fill in the blanks:
   a) Mutarotation is ________ .
   b) Homopolysaccharides are ________ .  5

Q.11  Make true and false. Correct the sentence if false.
   a) Glycogen is the body building component.
   b) Carbohydrate loading increases the glycogen levels.
   c) The ratio of consumption of Cho and protein should be 3:1 to 4:1.
   d) Salivary amylase acts in intestine.
   e) Facilitated diffusion requires energy.  5

End Semester Examination, May 2016
M. Sc. (N & D) – Third Semester
NUTRITION ESSENTIALS OF SPORTS (MNS-303)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part A and SIX questions from Part B.

PART-A

Q.1  Explain in detail about the various types of sports drinks.  10

Q.2  Discuss the pathophysiology of anorexia nervosa.  10

Q.3  Explain in detail about pharmacological agents as ergogenic aids.  10

Q.4  Explain the female athlete triad in detail.  10

PART-B

Write short notes on:

Q.5  Exercise prescription for diabetes mellitus.  5

Q.6  Disadvantages of ergogenic aids.  5

Q.7  Psychological features of anorexia nervosa.  5

Q.8  Role of vitamin B for sports persons.  5
End Semester Examination, May 2016
M. Sc. (N & D) - Fourth Semester
NUTRITION FOR VARIOUS GAMES AND SPORTS (MNS-401)

Time: 3 hrs                   Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Define a physiological characteristics of team sport. Describe the fluid and electrolyte during team sport activity. 10
Q.2 What are the various fuels required by contracting muscles in various sports? 10
Q.3 Explain the different gynecological problems/disorders in female sport person. Discuss the impact of diet on menarche and menstrual functions. 10
Q.4 Write in detail the various banned substances in sports, their practices and effects. 10

PART-B

Write short notes on the following:
Q.5 Hydration and electrolyte replenishment in endurance sports. 5
Q.6 Nutritional factors that could produce fatigue in volleyball players. 5
Q.7 Micronutrient requirement during cycling sport. 5
Q.8 Proper weight cutting strategies for wrestlers. 5
Q.9 Competition day eating in racket sports. 5
Q.10 Seasonal weight management principle in wrestling sport. 5
Q.11 Role of nutrition in sports performance and sport person fitness. 5

End Semester Examination, May 2016
M. Sc. (N & D) - Fourth Semester
CURRENT TRENDS IN SPORTS NUTRITION (MNS-402)

Time: 3 hrs                     Max Marks:  60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Explain the current nutrition guidelines for athletes in training. How we evaluate the athlete’s diet? 10
Q.2 Explain various boards and statutory bodies established by government for control and promotion of sports. Discuss their rules and functions in detail. 10
Q.3 What is the role of ministry of HRD in development of sports? Explain in detail. 10
Q.4 What are the role and functions of food packaging? Explain the product life cycle concept in detail. 10

PART-B

Q.5 Explain myths about sports nutrition. 5
Q.6 Discuss the role of food management companies. 5
Q.7 Write a short note on brand name and trade mark in new product development. 5
Q.8 Explain the role of sports in society. 5
Q.9 Write a short note on new product development. 5
Q.10 What is after sale service in new food product development? 5
Q.11 Write a short note on drug abuse. 5

End Semester Examination, May 2016
M. Sc. (N & D) - Fourth Semester
SPORTS MANAGEMENT AND MARKETING (MNS-403)

Time: 3 hrs                   Max Marks:  60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A
Q.1 Explain the process of decision making giving suitable examples. 10
Q.2 Discuss the trait theories of leadership. 10
Q.3 Describe the management of sporting and recreational organisation in detail. 10
Q.4 What is concept and objective of sales promotion? 10

PART-B
Q.5 Explain the role of the following:
a) Kinesiotherapist. 2½x2
b) Athletic trainer.
Q.6 What is conflict? What are the different stages in conflict process? 5
Q.7 What are the different practices adopted for bringing in high performance?  

Q.8 Discuss market segmentation.  

Q.9 What are the advantages and disadvantages of major advertising media in relation to sports?  

Q.10 Describe in brief:  
   a) Promotion in sports.  
   b) Marketing in sports.  

Q.11 Define:  
   a) Group cohesiveness.  
   b) Autocratic leadership.  

End Semester Examination, May 2016  
Master of Physiotherapy - Third Semester  
INTERDISCIPLINARY LEARNING (MPL-302)  

Time: 3 hrs  
Max Marks: 60  
No. of pages: 1  

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.  

**PART-A**  

Q.1 Explain in detail various components of health care marketing.  
10  

Q.2 Explain with suitable examples different formats of medical records.  
10  

Q.3 Define curriculum. Explain in detail various principles to be kept in mind while formulating curriculum.  
10  

Q.4 Differentiate between idealism and pragmatism the two forms of educational philosophic.  
10  

**PART-B**
Q.5 Write short note on privalization of education.  
Q.6 Explain briefly any one technique of teaching stating its advantages and disadvantages.  
Q.7 Explain various parts of lesson planning.  
Q.8 Differentiate between formal and informal education.  
Q.9 Write short notes on:  
   i) Guide for professional conduct.  
   ii) Role and responsibilities of physiotherapy director.  
Q.10 Explain briefly importance of continuous quality improvement.  
Q.11 Describe document format and clinical assessment format.  

End Semester Examination, May 2016  
Master of Physiotherapy (Musculoskeletal) - Third Semester  
ADVANCED THERAPEUTICS IN MUSCULOSKELETAL (MPM-301)  

Time: 3 hrs  
Max Marks: 60  
No. of pages: 1  

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.  

PART-A  

Q.1 Describe PRT in detail? What are the variation present in normal stretching and PRT.  
10  
Q.2 Explain in detail about neurophysiological principle given by butler.  
10  
Q.3 Explain in detail about the maitland concept of mobilization of spinal joint.  
10  
Q.4 What in CMT? Explain the importance of CMT. What are the physiological lans of spinal motion used in CMT?  
10
PART-B

Q.5 Explain reciprocal inhibition technique. 5
Q.6 TART method 5
Q.7 Headache SNAG 5
Q.8 Cover crossed syndrome 5
Q.9 Principle of cyriax mobilization 5
Q.10 Neural mobilization of sciatieneive. 5

End Semester Examination, May 2016
Master of Physiotherapy (Musculoskeletal) - Fourth Semester
EXERCISE PHYSIOLOGY AND EXERCISE PRESCRIPTION IN MUSCULOSKELETAL (MPM-401)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Describe the recruitment of various energy systems during athletic performance. 10
Q.2 Describe various neuromuscular adaptations to strength training. 10
Q.3 Discuss the factors affecting adaptations to endurance exercise training. 10
Q.4 Define flexibility. Discuss the importance of flexibility in accordance with ROM. Describe flexibility tests for upper and lower limbs.

10

PART-B

Q.5 Describe exercise prescription in osteoarthritis.

5

Q.6 Write a short note on recovery from training.

5

Q.7 Briefly highlight the role of exercise prescription in control of obesity.

5

Q.8 Describe physiological ageing.

5

Q.9 Write short notes on:
   a) Chronological age.
   b) Motor skill acquisition.

2½x2

Q.10 What do you understand by the term ‘Power Lever’ and why?

5

Q.11 Discuss the role of exercise prescription in type II diabetes.

5

Q.12 Graphically explain the length tension relationship.

5
Q.4 Explain the role of motor relearning program in treating hemiplegic patient.

10

PART-B

Q.5 Explain bad Ragaz technique of hydrotherapy.

5

Q.6 Explain principles of NDT.

5

Q.7 Explain SLR and its modification.

5

Q.8 Explain role of icing in facilitating the muscle.

5

Q.9 Explain role of biofeedback in gait training.

5

Q.10 Explain rhythmic initiation.

5

Q.11 Explain stages of recovery of brainstorm.

5
Q.2 Explain the phenomenon behind changes in various systems with aerobic exercises. 

10

Q.3 Describe the neuromuscular adaptations to strength training. 

10

Q.4 What social and economic barriers may account for the lower participation rate of women in physical activity? 

10

PART-B

Q.5 Explain how redistribution of blood occurs during exercise. 

5

Q.6 Explain how the gas exchange system operates at muscles. 

5

Q.7 Describe the main parts of a cool-down that should end a session and the benefits of that cool-down. 

5

Q.8 Critically analyse the statement “Resistance training improves hypertension”. 

5

Q.9 Briefly explain the mechanism of lactate threshold as related to work rate. 

5

Q.10 Briefly explain chronological age and motor skill acquisition. 

5

Q.11 Discuss the guidelines for prescribing exercise to type II diabetes. 

5

End Semester Examination, May 2016
Master of Physiotherapy (Sports) - Third Semester
ADVANCED THERAPEUTICS IN SPORTS (MPS-301)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.

PART-A

Q.1 Write about different somatotyping techniques and state the importance of somatotyping sports performance. 

10
Q.2 Discuss the offensive and defensive technique of football.
10

Q.3 Enumerate the various methods of body composition. Explain the importance of underwater weighing.
10

Q.4 Write the importance of force-plat form evaluation in sports rehabilitation.
10

**PART-B**

Q.5 Write the advantages of isokinetic evaluation in sports. 5

Q.6 Explain the offensive technique of basket ball. 5

Q.7 Explain the principle of MET. 5

Q.8 Write the role of electromyo graphic (EMG) evaluation in sports. 5

Q.9 Write the importance for skin fold measurement in calculating body fat. 5

Q.10 Write the importance of kinatheoponetoy knowledge in sports. 5

Q.11 Explain the importance of combined movement therapy. 5
Q.1 Explain ATP-Cr pool and its importance in anaerobic sports.
10

Q.2 Describe the cardio vascular adaptations to sustained aerobic exercise.
10

Q.3 Explain oxygen debt with the help of a graph.
10

Q.4 What is the effects of aging on muscular strength and training?
10

PART-B

Q.5 What is carbohydrate loading?
5

Q.6 Effects of exercise on menstrual cycle.
5

Q.7 Write a note on high-altitude training.
5

Q.8 Describe the types of fatigue.
5

Q.9 Exercise prescription for coronary heart disease.
5

Q.10 Principle of exercise testing.
5

Q.11 Exercise routine for diabetics.
5

End Semester Examination, May 2016
Master of Physiotherapy (Sports) - Forth Semester
EXERCISE PHYSIOLOGY AND EXERCISE PRESCRIPTION IN SPORTS
(MPS-401)

Time: 3 hrs.                   Max Marks: 60

No. of pages: 1

Note: Attempt any THREE questions from Part-A and SIX questions from Part-B.
PART-A
Q.1 Explain the hormonal regulation of fluid and electrolyte during Exercise. 10
Q.2 Describe various neuromuscular adaptations to strength training. 10
Q.3 Explain the role of Anaerobic Energy System in sports performance. 10
Q.4 Discuss the effects of exercise on Blood Pressure changes. 10

PART-B
Q.5 Briefly highlight the role of Exercise Prescription in type II diabetes. 5
Q.6 Write a short note on recovery from training. 5
Q.7 Write a short note on ACSM Guideline for Geriatric Patient. 5
Q.8 Explain the advantages & disadvantages of Carbohydrate Loading. 5
Q.9 Explain Runner’s high. 5
Q.10 Explain the Principle of Exercise Testing. 5
Q.11 Explain the Regulation of Respiration during Exercise. 5

End Semester Examination, May 2016
Master of Physiotherapy (Musculoskeletal) – Second Semester
EXERCISE PHYSIOLOGY (MPTM-201)

Time: 3 hrs
Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.
Q.1 Very short answers:
   a) Define OBLA.
   b) Oxygen debt.
   c) Define vital capacity.
   d) Define motor unit with an example.
   e) Define membrane potential.
   f) Define twitch.
   g) Define acclimatization.
   h) List the stress hormones.
   i) Define 1 RM.
   j) Differentiate between strength and endurance. 2×10

**PART-A**

Q.2 Explain the role of various energy systems in sports performance. 20

Q.3 Discuss the neural, muscular and biochemical adaptations to strengthen training. 20

Q.4 Describe the physiology of thermoregulation. Emphasize the role of hypothalamus in brief. 20

**PART-B**

Q.5 a) Explain Fick’s equation with an example. 10
   b) Describe the effect of endurance training on cardiovascular variables. 10

Q.6 a) Describe the physiological changes in children which make them unique for exercise training. 10
   b) Explain the effects of exercise on various hormones in the body. 10

Q.7 Describe briefly:
   a) Development of action potential.
   b) Heat related illness.
   c) Length tension relationship.
   d) Female athlete triad. 5×4

End Semester Examination, May 2016
Master of Physiotherapy (Musculoskeletal) – Second Semester
EVALUATION, DIAGNOSIS AND MANAGEMENT IN MUSCULOSKELETAL (MPTM-202)

Time: 3 hrs  Max Marks: 100
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.
Q.1  
a) What is apparent limb length measurement?  
b) Explain deformities of Hand in Rheumatoid arthritis.  
c) VAS.  
d) Explain tendinitis of supraspinatus muscle.  
e) Explain MUAP.  
f) Explain Coxa Valga.  
g) Explain Ape thumb deformity.  
h) What is rule of 9?  
i) Explain one method of static balance assessment.  
j) Explain the difference between rickets and osteomalacia.  

**PART-A**

Q.2  Write in detail about the physical disability evaluation.  

Q.3  Explain the common disorders of shoulder joint that you see in physiotherapy OPD. Explain any two with their assessment and physiotherapeutic management.  

Q.4  Explain Ankylosing Spondylitis. Write down its physiotherapeutic assessment, diagnostic test and management.  

**PART-B**

Q.5  
a) What is the significance of radiography in physiotherapy? Explain the radiographic findings you will get in bilateral osteoarthritic knee (grade-3).  
b) What is the difference between CT scan and MRI?  

Q.6  Explain brachial plexus injuries in detail. Explain injuries for any two nerves of upper limb.  

Q.7  What is amputation? Write in detail about the pre-and-post operative physiotherapeutic management of above knee amputation.
c) Describe headache SNAG.
d) What is motor unit action potential?
e) Explain popping up the wheelchair.
f) What are the types of dysfunctions according to McKenzie?
g) Explain the advantages of Isokinetic over Isometric and Isotonic exercises.
h) Describe the values range of normal, overweight and obese BMI groups.
i) Explain the role of traction in Kaltenborne mobilization.
j) Explain taping for lateral patellar subluxation.  

**PART-A**

Q.2 Explain the following:
a) Mobilization technique for shoulder joint in case of adhesive capsulitis.
b) Mobilization technique for lumbar spine in case of L3L4.
c) Mobilization of metatarsophalangeal joint.
d) Mobilization technique for hip joint in case of osteoarthritis of hip.  

Q.3 Explain the principle of mulligan mobilization in detail. Describe the mulligan technique in case of cervical radiculopathy.  

Q.4 Explain the physiotherapeutic effects of taping. What are its principle and also explain the advantages and disadvantages of taping?  

**PART-B**

Q.5 What are the various methods of measuring body fat? What are the advantages and disadvantages of BIA?  

Q.6 Write in detail about surface EMG. Explain the insertional activity of a muscle and components of MUAP.  

Q.7 Explain Isokinetic dynamometry in detail. Explain the technique of measuring the eccentric contraction of knee extensions.  

**End Semester Examination, May 2016**  
Master of Physiotherapy (Musculoskeletal) – Second Semester  
**APPLIED PSYCHOLOGY (MPTM-204)**  

Time: 2hrs  
Max Marks: 50  
No. of pages: 1  

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory**. Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B**. Each question carries equal marks.  

Q.1 a) Define orientation.
b) What are signs and symptoms of ADHD?  
c) Define Aphasia.
d) Define learning disability.
e) What is social support?  

**PART-A**

Q.2 What is reliability? Explain its various types.  
Q.3 Write in detail about the approaches of perception.  
Q.4 What is mental retardation? Write the cause, diagnosis and treatment of the same.  

**PART-B**

Q.5 What are the characteristics features of Autism? Describe its causes and symptoms.  
Q.6 Describe emergence of cognitive psychology in detail.  
Q.7 Write a note on MMSE.
f) Explain isokinetic exercise.
g) Define acclimatization.
h) Explain homeostasis.
i) Benefits of warm-up and cool down.
j) Explain glycolysis.

PART-A

Q.2  
a) Explain the role of energy systems on sports performance.  
b) Write a short note on fatigue.  
c) Explain the energy conservation techniques in brief.

Q.3  
a) Explain the various pulmonary and cardiovascular adaptations to strength and endurance in a 48 year old stroke patient.  
b) Discuss the changes in blood pressure in a healthy individual at rest, during exercise and in recovery phase.

Q.4  
a) Explain the pulmonary ventilation at: i) rest ii) strenuous activity.  
b) Explain the relationship between oxygen uptake and work rate.  
c) Explain Fick’s principle. Comment on Fick’s equation.

PART-B

Q.5  
a) Describe the neuromuscular adaptations to strength training.  
b) Explain the conditioning principles for strength training in brief.  
c) Explain the do’s and don’ts for prescribing sports activities for a geriatric population.

Q.6  
a) Explain the process of thermoregulation. Explain the impact of altitude on exercise capacity.  
b) Discuss heat related illness in detail.

Q.7  
a) Explain the impact of exercises on Insulin and Glucagon.  
b) Explain the regulation of fat metabolism during exercise.
Q.2  
a) Discuss the critical analysis of multidimensional of functional scales. 10  
b) Write similarities and differences of Nagi's and WHO'S model of functional evaluation. 10  

Q.3  
a) What is ergonomics? Write the principles of neuro-ergonomics. 10  
b) Describe about the human brain interaction in detail. 10  

Q.4  
a) Describe the neurophysiology of EMG studies in detail. 10  
b) Write in brief about interpretation of evoked potential in neurological conditions. 10  

PART-B  
Q.5  
a) Describe the importance of investigations and radiology in neuro-physiotherapy. 10  
b) Compare and contrast the use of MRI and CT scan in neurological cases. 10  

Q.6  
What do you understand by three point pressure principle? Describe the application of two orthosis in neuro physiotherapy based on this principle. 20  

Q.7  
a) Describe the pathophysiology of stroke. Write the classification of stroke. 10  
b) Write the advances in the management of stoke patient in the light of the evidences. 10  

End Semester Examination, May 2016  
Master of Physiotherapy (Neurology) – Second Semester  
PHYSIOTHERAPEUTICS-II (MPTN-203)  

Time: 3 hrs Max Marks: 100  
No. of pages: 1  

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.  

Q.1 Write short notes on:  
a) Normal motor unit potential.  
b) Define learned non-use.  
c) Basic requirement for suitability of CIMT.  
d) Define sensitization.  
e) Explain feed forward mechanism.  
f) Stages of mental imagery.  
g) Upper extremity patterns of PNF.  
h) Name the Brunnstom’s sequential recovery stages of stroke.  
i) What is popping?
j) Name the parts of wheelchair. \(2 \times 10\)

**PART-A**

Q.2 a) Briefly explain clinical testing of sensory integration and balance. \(10\)
b) Explain neural plasticity and its principle. \(5\)
c) Voluntary control assessment and therapeutic approaches based on motor learning. \(5\)

Q.3 a) Explain the recovery of function after brain damage. \(5\)
b) Explain the various inhibitory and facilitatory techniques for spasticity reduction. \(10\)
c) Briefly explain the management of oromotor dysfunction. \(5\)

Q.4 a) What do you understand by PNF? In the light of evidence discuss the clinical application of various principles of Proprioceptive Neuromuscular Facilitation. \(15\)
b) Critically analyze the usage of mental imagery technique in rehabilitation. \(5\)

**PART-B**

Q.5 a) Discuss the various types of wheelchairs. What modifications will be done in a wheelchair while prescribing it to C 5 spinal cord injured patient? \(15\)
b) Briefly explain the basic requirement from the patient in order to self-transfer from bed to wheelchair. \(5\)

Q.6 a) Briefly explain the therapeutic principles of yoga. Explain the effects of yoga on various systems of body. \(10\)
b) What is pranayama? Discuss its suitability for prescribing it to patients. \(10\)

Q.7 a) Explain the EMG in myasthenia gravis. \(5\)
b) In the light of evidence discuss the role of functional electrical stimulation for gait training in stroke population. \(10\)
c) Discuss briefly the various methods of body fat analysis. \(5\)
Q.4 How can we ensure wellness in rehabilitation?  

**PART-B**

Q.5 Define ADHD. Enumerate its causes and treatment of the same.  

Q.6 What is defence mechanism? What are various types of defence mechanism utilized by people against stressors?  

Q.7 What is coping? Explain various coping strategies.  

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**End Semester Examination, May 2016**  
Master of Physiotherapy (Sports)- Second Semester  
**EXERCISE PHYSIOLOGY (MPTS-201)**

Time: 3 hrs.  
Max Marks: 100  
No. of pages: 1  

Note: Attempt **Five** questions in all; **Q.1 is compulsory.** Attempt any **TWO** questions from **Part-A** and **TWO** questions from **Part-B.**

Q.1 a) Define Fatigue.  
b) Write the role of fat in a body.  
c) Explain the term ‘Frost bite’.  
d) Differentiate between fast and slow-twitch muscle fibers.  
e) Explain the term: ‘Second wind’.  

**4x5**

**PART-A**

Q.2 Discuss the recruitment of various energy systems during an athletic performance.  

20

Q.3 Explain the effects of exercise on various hormones in the body.  

20
Q.4 Discuss the factor affecting adaptations to strength and endurance training.

PART-B

Q.5 a) Explain the changes affecting ‘cardiac output’ at rest during exercise.
b) Explain the effects of exercise on blood pressure.

Q.6 Explain the term: ‘ventilatory threshold’. Explain the role of oxygen consumption during exercise and recovery.

Q.7 Explain the carbohydrate feeding prior to, during and in recovery from exercise. Write the importance of pre-competition meal on performance.
f) Piriformis Syndrome.
g) Patrick Test.
h) Sit & Reach Test.
i) Common Injuries seen in Swimming.
j) Name the tests used for checking impingement of shoulder joint.  

PART-A

Q.2  a) Discuss the importance of pre-participation assessment in sports.  
b) Discuss the different levels of sports injury prevention in detail.  

Q.3  Write about clinical features, mechanism of injury, special test, and management of the following:
a) Tennis Elbow.
b) Bicipital Tendinitis.  

Q.4  Write about clinical features, mechanism of injury, special test, and management of the following:
a) ACL.
b) Shin Splint.  

PART-B

Q.5  Enumerate the commonly sports injuries seen in children and discuss any one in detail.  

Q.6  a) Discuss the importance of EMG in sports rehabilitation in detail.  
b) Discuss the importance of Force Platform in rehabilitation in detail.  

Q.7  Discuss the different heat injuries on the basis of etiology, signs and symptoms seen in sports and note on their management.  

End Semester Examination, May 2016  
Master of Physiotherapy (Sports) – Second Semester  
PHYSIOTHERAPEUTICS-II (MPTS-203)  

Time: 3 hrs  
Max Marks: 100  
No. of pages: 1  

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.  

Q.1  Write short notes on:
a) What are the types of dysfunctions according to McKenzie?  
b) What are advantages of isokinetics over isometric and isotonic exercises?  
c) What is the formula for calculating BMI?  
d) Explain the role of traction in Kalternborn Mobilization?  
e) Explain the taping for lateral patellar subluxation.  
f) Explain reverse NAG.  
g) Define somatotyping.  
h) Active wheelchair Vs Passive Wheelchairs.  
i) What is motor unit action potential?  
j) Write down few uses of EMG.
**PART-A**

Q.2 Explain the principle of Mulligan Mobilization in detail. Describe the Mulligan technique in case of cervical radiculopathy.  

Q.3 a) Define Kinanthropometry. What are the uses of anthropometry in sports physiotherapy?  

b) What were the drawbacks in Sheldon’s method of somatotyping?  

Q.4 What are the basic principles of taping? Enumerate the indication and contraindications for taping. Add a note on physiotherapeutic effect of taping.  

**PART-B**

Q.5 Explain isokinetic dynamometry in detail. Explain the technique of measuring the eccentric contraction knee extensors.  

Q.6 What are effects of yoga on different systems of the body?  

Q.7 a) Write in detail about the advantages and disadvantages of different types of wheelchairs.  

b) What are the advantages and disadvantages of BIA for measuring body composition?
PART-B

Q.5 Write short notes on:
   a) Biofeedback Training.
   b) Stress management.  

Q.6 Write short notes on:
   a) Characteristics of Emotion.
   b) Psychological Aspect of Doping.  

Q.7 a) Define eating disorders. Discuss how they are related to sports performance?
   b) Discuss the role of Psychology in dealing with injuries.