

# End Semester Examination, Dec. 2015

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

## HUMAN DEVELOPMENT (BN&D-106)

Time: 3 hrs

Max Marks: **50**

No. of pages: 1

Note: Attempt any **TWO** questions from **Part-A** and **TWO** questions from **Part-B**. **Q.1** is **compulsory**. All questions carry equal marks.

Q.1 Discuss the various risk factors for a prenatal period of development in detail. **10**

### **PART-A**

Q.2 Enlist the various principles of growth and development using relevant examples. **10**

Q.3 Discuss any one theory that emphasizes on the role of biological factor in development. **10**

Q.4 What is APGAR scale? How is it used to analyze the condition of a newborn? **10**

### **PART-B**

Q.5 What are the various alternate forms of parenthood? **10**

Q.6 Discuss the physical development of an adolescent in detail. **10**

Q.7 How is cognitive development crucial for early and middle childhood period of development? **10**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - First Semester  
**FUNDAMENTAL 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 Write very short notes on:

- a) Hook's law.
- b) Electromagnetic induction.
- c) Angle of pull.
- d) Centre of Mass.
- e) Anatomic position.
- f) Antagonist muscle.
- g) Isotonic contraction.
- h) Ohm's Law.
- i) Archimedes's principle.
- j) Viscosity.

**2x10**

**PART-A**

- Q.2 a) Define levers. Give examples of levers in daily life and in human body. **10**  
b) Define pulley. Classify pulleys and give their use in physiotherapy. **10**
- Q.3 a) What is axis and planes? Classify axis and planes and give the movements that are taking place along them. **10**  
b) What is joint? Classify the joints with examples. **10**
- Q.4 a) What is equilibrium? Give types and factors affecting equilibrium in detail. **10**  
b) Define Newton's law of motion and its physiotherapy implications in brief. **10**

**PART-B**

- Q.5 a) What is electromagnetic spectrum? Write in detail about the uses and properties of each of the electromagnetic radiations. **10**  
b) Write the principle and use of condensers. **10**
- Q.6 a) Explain Ohm's law. Give the details of resistance in series and in parallel. **10**  
b) Give types of transformers. **10**
- Q.7 What is electric shock? Write the causes of electric shock in physiotherapy department along with its prevention and management. **20**

**End Semester Examination, Dec. 2015**  
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 Elaborate the characteristics of five Kingdom classifications. Give adequate example of each group and enlist the advantages of five kingdom classifications. **20**

**PART-A**

- Q.2 Complete the following sentences:

- a) OSMOSIS is \_\_\_\_\_.
- b) Density in the relationship between \_\_\_\_\_.
- c) The term pH refers to \_\_\_\_\_.
- d) Evaporation is \_\_\_\_\_.
- e) Surface tension is the \_\_\_\_\_.
- f) Humidity is the presence of \_\_\_\_\_.

**20**

- Q.3 Give reason for the following:

- a) A RBC swells when kept in distilled water.
- b) The plants with mycorrhizae are very healthy.
- c) Chemosynthesis can occur throughout day and night.
- d) Pseudopodia is false limb of protists.
- e) The Mode of nutrition of fungi is heterotrophic.

**20**

- Q.4 What are algae? Explain the difference between red, brown and green algae. Enlist the economic importance of algae. **20**

**PART-B**

- Q.5 Differentiate between the following:

- a) Sporulation and binary fission.
- b) Photoautotrophic and Chemoautotrophic bacteria.
- c) Saprophytic and symbiotic bacteria.
- d) Parasite and obligatory anaerobe

**20**

- Q.6 Explain the modes of nutrition in protists bacteria and fungi with adequate an examples. **20**

- Q.7 Explain the following chemical relations:

- a) Oxidation-reduction reactions.
- b) Decomposition reactions.
- c) Displacement reactions.
- d) Combination reactions.

**20**

**End Semester Examination, Dec. 2015**  
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 Elaborate the characteristics of five Kingdom classifications with examples and also enlist the advantages of five kingdom classifications. **20**

**PART-A**

- Q.2 Briefly explain the following:  
a) OSMOSIS.  
b) Buffers.  
c) Humidity.  
d) Relative humidity.  
e) Surface tension. **4x5**
- Q.3 Write down the difference between plant cell and animal cell with diagram. **20**
- Q.4 What are algae? Explain the difference between red, brown and green algae. Enlist the economic importance of algae. **20**

**PART-B**

- Q.5 Explain the mode of nutrition in protista, bacteria and fungi with examples. **20**
- Q.6 Explain the following chemical relations:  
a) Oxidation-reduction reactions.  
b) Decomposition reactions.  
c) Displacement reactions.  
d) Combination reactions. **5x4**
- Q.7 Differentiate between the following:  
a) Parasite and obligatory anaerobe.  
b) Prokaryotic and Eukaryotic cell.  
c) Saprophytic and symbiotic bacteria.  
d) Sporulation and binary fission. **5x4**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - Second Semester  
**FUNDAMENTALS OF FOOD AND NUTRITION (BN&D-102)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

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 importance of nutrition science in our daily life by giving suitable examples. **20**

**PART-A**

Q.2 What are the functions of food? Justify your answer with suitable examples. **20**

Q.3 Give the nutritional classification of proteins. Explain the functions, RDA dietary sources and deficiency problems related to protein in detail. **20**

Q.4 Give the functions, RDA, dietary sources and deficiency symptoms of the following:  
a) Vitamin A.  
b) Calcium. **20**

**PART-B**

Q.5 What do you mean by food groups? Explain the food pyramid with a diagram. **20**

Q.6 What are the objectives of cooking? Explain the advantages and disadvantages of each cooking method in detail. **20**

Q.7 Write short notes on the following:  
a) Functional foods.  
b) Organic foods.  
c) Convenience foods.  
d) Genetically modified foods. **5x4**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - First Semester  
**FUNDAMENTALS OF FOOD AND NUTRITION (BN&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 What are the functions of food? Explain in detail with suitable examples. **20**

**PART-A**

Q.2 What are the functions of carbohydrates? Give the RDA, dietary sources and deficiency problems related to carbohydrates. **20**

Q.3 Describe the functions, RDA, dietary sources and deficiency problems related to Iron. **20**

Q.4 Briefly discuss the food groups and food pyramid. How they help in planning a balance diet? **20**

**PART-B**

Q.5 What are the principles of cooking? Explain in detail dry and moist heat methods of cooking. **20**

Q.6 Discuss the microwave and solar cooking methods. How these cooking methods are helpful to preserve the nutrients and fuel efficient? **20**

Q.7 What do you mean by Novel foods? Explain about any two Novel foods in detail. **20**

# End Semester Examination, Dec. 2015

## B. Sc. (N & D) -First Semester BIOCHEMISTRY-I (BN&D-103)

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: **Q.1** is **compulsory**. Attempt any **Two** questions from **Part-A** and **Two** questions from **Part-B**. Marks are indicated against each question.

Q.1 Briefly explain the following terms:

- a) Nucleus.
- b) Fatty acids.
- c) Essential amino acids.
- d) Water soluble vitamins.
- e) Chemical properties of water.

**4x5**

### **PART-A**

- Q.2 a) Define vitamins. Explain the dietary sources and biochemical functions of vitamin-A and vitamin-E. **10**
- b) Briefly explain the structure of water along with its functions in body. **10**

Q.3 a) Define the following:

- i) Macrominerals.
- ii) Phospholipids.
- iii) Starch.
- iv) Biomolecules.
- v) Nucleic acids.

**2x5**

- b) Discuss various physico-chemical properties of amino acids/proteins. **10**

Q.4 a) Differentiate between:

- i) Prokaryotic cell and Eukaryotic cell.
- ii) Essential amino acid and non-essential amino acid.

**5x2**

- b) How electrolyte balance is regulated in the body? **10**

### **PART-B**

- Q.5 a) Discuss various biochemical properties of vitamins. **10**
- b) How does digestion of lipids takes place in the body. **10**

Q.6 a) Give structures of the following:

- i) Glucose.
- ii) D-fructose.
- iii) Lactose.
- iv) Amylose.

**2½x4**

- b) What is the biochemical role of carbohydrates in the body? **10**

Q.7 Discuss the various functions of proteins and lipids in the body. **20**

# End Semester Examination, Dec. 2015

## 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) Electrolyte balance.
- b) Prokaryotic cell.
- c) Lipids.
- d) Macrominerals.
- e) Phospholipids.

**4x5**

### **PART-A**

Q.2 a) Define carbohydrates. Explain various biochemical functions of carbohydrates in the body. **10**

b) Briefly explain the classification of carbohydrates with examples. **10**

Q.3 a) Explain the process of protein digestion in the body. **10**

b) Differentiate between essential and non essential amino acids. **10**

Q.4 Give structures of the following:

- a) Glucose.
- b) Amino acid.
- c) Water.
- d) Maltose.

**5x4**

### **PART-B**

Q.5 a) Discuss the role of vitamins in the body. **10**

b) Differentiate between fat soluble vitamins and water soluble vitamins. **10**

Q.6 Draw a well labeled diagram of eukaryotic cell. Explain about its sub cellular organelles. **20**

Q.7 a) Write a note on biochemical role of iron, calcium and sodium in the body. **10**

b) Explain the structure of proteins. **10**



**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - First Semester  
**ANATONEY AND PHYSIOLOGY-I (BN&D-104)**

Time: 3 hrs

Max Marks: 100

No. of pages: 1

Note: **Question 1 is compulsory**; Attempt any two questions from **Part A** and **Part B**:

- Q.1 What is organ system? Write the names and organs come in each system. Describe the usage of each organ system in a human body? **20**

**PART-A**

- Q.2 Draw the labeled diagram of a cell. Describe the various mode of transportation across the cell membrane with diagrammatic presentation. **20**

- Q.3 Describe all accessory organs, their structure secretion and functions in detail **20**

- Q.4 Write short notes on **any four**:

- a) Ribosomes.
- b) Mechanism of HCL formation.
- c) Anaemia.
- d) Endocytosis.
- e) White blood cells (WBC's).

**20**

**PART-B**

- Q.5 Draw the labelled structure of heart with its anatomy, conducting elements of the heart. Define the cardiac cycle in detail. **20**

- Q.6 Write short notes on **any four**:

- a) Spleen and its functions.
- b) Define the structure of artery.
- c) Striated muscle.
- d) Respiratory volume.
- e) Cardiac output.

**20**

- Q.7 Give a labeled diagram of lungs. Define its parts and functions. Also define the cycle and breathing in brief. **20**

**End Semester Examination, Dec. 2015**  
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 Describe the scope of anatomy and physiology in nutrition and dietetics. **20**

**PART-A**

Q.2 Write short notes on the following:

- a) Osmosis.
- b) Draw a structure of cell and label it.
- c) Exocrine glands with example.
- d) Passive transport.

**5x4**

Q.3 Describe various parts of the GI tract, their secretions and functions. **20**

Q.4 Describe the mechanism of clotting, if any blood vessel and tissue is damaged. **20**

**PART-B**

Q.5 Draw a labeled diagram of heart and its anatomy. Define the cardiac cycle in detail. **20**

Q.6 Describe the structure of lungs and its functions. Define the physiology of respiration. **20**

Q.7 Write short notes on:

- a) Type and structure of muscles. **10**
- b) Describe respiratory volume-Tidal volume, expiratory reserve volume, inspiratory reserve volume, residual volume, vital capacity. **10**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - First Semester  
**FOOD HYGIENE AND SANITATION (BN&D-105)**

Time: 3 hrs

Max Marks: **50**

No. of pages: 1

Note: *Question 1 is compulsory; Attempt **any two** questions from **Part A** and **Part B**:*

Q.1 Describe the involvement of government in the maintenance of hygiene and sanitation aspects of the surroundings. **10**

**PART-A**

Q.2 Explain the meaning and importance of sanitation and its correlation to hygiene. **10**

Q.3 Write a note on the personal hygiene and food handling habits of the workers. **10**

Q.4 Describe the process of purification and disinfection of water. **10**

**PART-B**

Q.5 Describe the sanitary aspects of waste disposal. **10**

Q.6 What is HACCP? Describe its principle by explaining a case study. **10**

Q.7 How are micro organisms important in food sanitation? **10**

**End Semester Examination, Dec. 2015**  
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 Give few examples of your environment in relation to hygiene and sanitation. **10**

**PART-A**

Q.2 What is the role of sanitation in food plants? **10**

Q.3 Describe the importance and application of personal hygiene. **10**

Q.4 Describe the water supply and its uses in food industries. **10**

**PART-B**

Q.5 Discuss HACCP. **10**

Q.6 What are the various microorganisms important in food sanitation? **10**

Q.7 Write a note on cleaning practices and waste disposal.

**10**

**End Semester Examination, Dec. 2015**  
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. Explain functions, RDA, dietary sources and deficiency problems related to carbohydrates. **10**
- Q.2 Classify vitamins. Discuss the functions, RDA, dietary sources and deficiency symptoms of vitamin-A. **10**
- Q.3 What are the advantages of cooking? Discuss the different methods of cooking with suitable recipe example. **10**
- Q.4 Explain the food groups and food pyramid according to ICMR. **10**

**PART-B**

- Q.5 Describe the physiological functions of food. **5**
- Q.6 Discuss the socio-psychological functions of food with suitable examples. **5**
- Q.7 Define the following terms:  
a) Nutrition  
b) Dietetics  
c) Health  
d) Malnutrition  
e) Immunity **5**
- Q.8 What is vegetarianism? Explain the advantages and disadvantages of vegetarianism. **5**
- Q.9 What is nano-technology? Explain the advantages of nano-foods. **5**
- Q.10 Describe the functions RDAs and dietary sources of iron. **5**
- Q.11 Explain the role of water in our body. **5**

# End Semester Examination, Dec. 2015

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

## PHYSIOLOGY-I (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 Write the steps involved in coagulation of blood. **10**
- Q.2 Explain the digestion of CHO, proteins and fats in human digestive system. **10**
- Q.3 Discuss the human urinary system with the help of a well labeled diagram. **10**
- Q.4 Explain cardiac cycle with the help of a diagram. **10**

### **PART-B**

- Q.5 Give the ABO blood group system. **5**
- Q.6 Write the functions of liver. **5**
- Q.7 What is blood pressure? What are the factors affecting blood pressure? **5**
- Q.8 Write a short note on pituitary gland. **5**
- Q.9 Describe menstruation cycle in females. **5**
- Q.10 Draw a well labeled diagram of nervous tissue. **5**
- Q.11 What are the physiological changes that occurs during pregnancy? **5**

**End Semester Examination, Dec. 2015**  
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. **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 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  
d) Thiamine  
e) Vitamin E **5**
- Q.10 What are different types of fatty acids? Explain. **5**
- Q.11 What are phospholipids? **5**

# End Semester Examination, Dec. 2015

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

## ENGLISH (BND-104)

Time: 3 hrs

Max Marks: **60**

No. of pages: 2

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

### **PART-A**

- Q.1 Write an essay on **any one** of the following:  
a) Swachh Bharat Abhiyaan  
b) Role of youth in the society **10**
- Q.2 Spot the error and correct them in the following sentences:  
a) I have completed my work now only.  
b) The class has been prepond by 30 minutes.  
c) I am hating the weather.  
d) It didn't rained yesterday.  
e) I am not having a pen.  
f) My brother and I am travelling to London tomorrow.  
g) Myself and my father drove down to the airport.  
h) Please return back my book.  
i) He doesn't likes cricket.  
j) Why aren't you understanding me? **1X10**
- Q.3 Write a letter to your DEAN, requesting him to allow you 10 days extension to pay your college fees. Give appropriate reasons for the delay. Assume other details. **10**
- Q.4 Your college recently participated in Green Faridabad Campaign by planting 1 Lakh saplings in Faridabad. This function was attended by the CM of your state along with other dignitaries. Write a newspaper article on the event. Assume other details. **10**

### **PART-B**

- Q.5 Choose the correct definite or indefinite article: "the", "a", "an" or "x" (zero article):  
a) I bought \_\_\_\_\_ pair of shoes.  
b) I saw \_\_\_\_\_ movie last night.  
c) They are staying at \_\_\_\_\_ hotel.  
d) Look at \_\_\_\_\_ woman over there! She is a famous actress.  
e) I do not like \_\_\_\_\_ basketball.  
f) That is \_\_\_\_\_ girl I told you about.  
g) \_\_\_\_\_ night is quiet. Let's take a walk!  
h) \_\_\_\_\_ price of gas keeps rising.  
i) John traveled to \_\_\_\_\_ Mexico.  
j) She works in \_\_\_\_\_ HR firm. **1x10**
- Q.6 a) Define the word "Phonetics". What is the relevance of phonetics in English language? **5**  
b) Make two words using the following Prefix:  
i) Anti- **2** ii) Extra- **2**  
c) Make two words using the following suffix:  
i) Ship **2** ii) Hood **2**



d) Transcribe "Love" using IPA symbol.

**1**

Q.7 Explain the difference between listening and hearing. Discuss the techniques and barriers to effective listening. **10**

Q.8 Fill up the blanks with appropriate preposition:

- a) There is a dish full of fruits \_\_\_\_\_ the kitchen.
- b) The rain is going \_\_\_\_\_ the tunnel.
- c) There are beautiful places in and \_\_\_\_\_ Delhi.
- d) Their traditions are similar \_\_\_\_\_ us.
- e) The woman is looking \_\_\_\_\_ her daughter.
- f) What are you doing \_\_\_\_\_ Saturday?
- g) I am going to the countryside \_\_\_\_\_ the weekend.
- h) God will protect you \_\_\_\_\_ all harms.
- i) We need to be careful \_\_\_\_\_ our food.
- j) I am standing \_\_\_\_\_ the window.

**1X10**

**End Semester Examination, Dec. 2015**  
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 | Discuss the types and functions of DNA and RNA.                  | <b>10</b> |
| Q.2 | Explain the glycolysis pathway in detail.                        | <b>10</b> |
| Q.3 | What are hormones? Discuss various hormones of endocrine system. | <b>10</b> |
| Q.4 | Explain the B-oxidation of fatty acids in detail                 | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | Define pH and colloids.  | <b>5</b> |
| Q.6  | Differentiate between endocytosis and exocytosis.                        | <b>5</b> |
| Q.7  | Briefly explain the chemical nature of enzymes.                          | <b>5</b> |
| Q.8  | Calculate the number of ATP molecules produced during citric acid cycle. | <b>5</b> |
| Q.9  | What do you understand by transamination?.                               | <b>5</b> |
| Q.10 | What are various factors affecting enzyme activity?                      | <b>5</b> |
| Q.11 | Briefly explain the biochemical importance of cholesterol.               | <b>5</b> |

**End Semester Examination, Dec. 2015**  
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 What do you understand by complimentary feeding? What are the considerations while preparing complimentary feeds for the infant? **10**
- Q.2 Discuss various nutrition related problems common among the elderly. What steps would you advocate to overcome the same? **10**
- Q.3 Discuss the physiological changes occur during pregnancy. Explain the nutrient need and feeding pattern during pregnancy. **10**
- Q.4 What is the growth and development pattern during childhood? Comment on a food preferences and nutritional requirement of a preschooler. **10**

**PART-B**

- Q.5 Explain the importance of mother milk for infant. **5**
- Q.6 What is baby friendly hospital initiatives (BFHI)? **5**
- Q.7 Explain the importance of packed lunches. **5**
- Q.8 Explain the food security and its importance. **5**
- Q.9 What are the methods of planning low cost balance diet. **5**
- Q.10 Write date of celebration for the following:  
a) World Health Day.  
b) World Food Day.  
c) World Elderly Day.  
d) World AIDs Day.  
e) International Women's Day. **1x5**
- Q.11 Define the following terms:  
a) Growth.  
b) Development.  
c) Stunting.  
d) Wasting.  
e) LBW. **1x5**

# End Semester Examination, Dec. 2015

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

## CLINICAL PSYCHOLOGY (BND-203)

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 various eating disorders? Explain any one in detail giving its prevalence, symptoms and management. **10**
- Q.2 Explain with the help of suitable example factors affecting growth and development. **10**
- Q.3 Explain assumptions and steps in various techniques of counseling. **10**
- Q.4 Define psychology. Explain the application of psychology in various fields. **10**

### **PART-B**

- Q.5 Define counseling. Explain major characteristics or elements of counseling which help in understanding the meaning of counseling. **5**
- Q.6 What is family therapy? Explain its importance. **5**
- Q.7 Explain various negative effects of stress. **5**
- Q.8 Differentiate between growth and development. **5**
- Q.9 Write short notes on any one method of studying behavior. **5**
- Q.10 Define emotions. Explain any one theory of emotion. **5**
- Q.11 Write short notes on:  
a) Consulting technique for children.  
b) Importance of reality therapy. **2<sup>1</sup>/<sub>2</sub>x2**

**End Semester Examination, Dec. 2015**  
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 Discuss the etiology in the development of tuberculosis. Describe the common signs and symptoms in their condition. Also state the mode of treatment and the dietary modification prescribed **10**
- Q.2 Describe the etiology, manifestation and dietary management for diabetes mellitus. **10**
- Q.3 Discuss eating disorders and their types in detail. **10**
- Q.4 Write in detail about etiology and dietary management for cirrhosis of liver. **10**

**PART-B**

- Q.5 Write a short note on methods of feeding in hospital. **5**
- Q.6 Describe dietary management for atherosclerosis in brief. **5**
- Q.7 Briefly explain gall stones. **5**
- Q.8 State dietary management in planning diet for patient suffering from acute renal failures. **5**
- Q.9 Explain dietary management for burns. **5**
- Q.10 Briefly discuss etiology and dietary management for gout. **5**
- Q.11 Write a short note on nutritional assessment. **5**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) – Third Semester  
**PROBLEMS IN HUMAN NUTRITION (BND-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 about the prophylaxis programme of anemia. **10**
- Q.2 Explain the symptoms of fluorosis in detail. **10**
- Q.3 Discuss the biochemical changes occurring in PEM with respect to carbohydrate, fat and protein. **10**
- Q.4 Discuss the causes of protein energy malnutrition. **10**

**PART-B**

Write short notes on:

- Q.5 Classification of iron sources and factors affecting it. **5**
- Q.6 Classification of anemia. **5**
- Q.7 Prevention and treatment of IDD. **5**
- Q.8 Pathological changes in PEM. **5**
- Q.9 Give the Classification of PEM. **5**
- Q.10 Sources of vitamin A. **5**
- Q.11 Prevention of fluorosis. **5**

# End Semester Examination, Dec. 2015

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

## COMMUNITY RESOURCE MANAGEMENT AND EXTENSION (BND-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 different methods of community contact? Explain any one method of community contact giving its advantages and disadvantages. **10**
- Q.2 What is decision making? Explain its importance and steps involved in decision making. **10**
- Q.3 Define fatigue. Differentiate between physiological and psychological fatigue with suitable examples. **10**
- Q.4 Define communication. Explain with suitable examples different barriers to communication and ways to overcome barriers. **10**

### **PART-B**

- Q.5 Write a short note on system approach to management standards. **5**
- Q.6 Briefly explain how one can manage the use and conservation of resources. **5**
- Q.7 Give a brief account of philosophy of extension education. **5**
- Q.8 Differentiate between projected and non-projected audio-visual aids. **5**
- Q.9 Explain importance of directing and guiding in management process. **5**
- Q.10 Briefly explain internal and external environment in management keeping in view systems approach to management. **5**
- Q.11 Explain communicator-receiver relationship in brief. **5**

# End Semester Examination, Dec. 2015

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

## COMPUTER APPLICATIONS (BND-304)

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 definition of computer, its components and their functions in detail? **10**
- Q.2 What is MS-Excel? Write all the macro and micro features of it. **10**
- Q.3 What are network topologies and its types? Explain the advantages and disadvantages of network topologies in detail. **10**
- Q.4 What is MS-power point? Describe all the features required for an effective presentation in detail. **10**

### **PART-B**

- Q.5 What do you understand by the file management system? **5**
- Q.6 Write the full form of the following:  
a) LAN  
b) WAN  
c) WWW  
d) BPS  
e) HTML **5**
- Q.7 What do you understand by a search engine? **5**
- Q.8 How many types of slide transition features are available in MS Power Point? **5**
- Q.9 Explain the steps of mail merge in MS-Word. **5**
- Q.10 What is file transfer protocol (FTP)? **5**
- Q.11 Write a note on integrating worksheet data and charts with MS Word? **5**



# End Semester Examination, Dec. 2015

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

## COMMUNITY NUTRITION (BND-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 Write a detailed note on "National Nutritional Anemia Control Programme (NNACP)". **10**
- Q.2 Discuss anthropometry assessment for adults in detail. **10**
- Q.3 Explain psychology of learning in brief. **10**
- Q.4 Explain community development process in detail. **10**

### **PART-B**

- Q.5 Write short notes on:  
a) Special nutrition programme (SNP).  
b) Balwadi feeding programme. **2<sup>1</sup>/<sub>2</sub>x2**
- Q.6 Give full forms of:  
HDI, IRDP, MMR, NSS and UNICEF. **5**
- Q.7 Write short notes on:  
a) Quality of life.  
b) Primary health care. **2<sup>1</sup>/<sub>2</sub>x2**
- Q.8 Discuss "Prevention of Food Adulteration Act (1954)" in brief. **5**
- Q.9 Briefly discuss relation between cultural patterns and diet related behavior. **5**
- Q.10 Discuss social marketing in brief. **5**
- Q.11 Write in brief how to develop an effective community leadership. **5**

**End Semester Examination, Dec. 2015**  
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 Discuss the processing of oils using a relevant flow chart. **10**
- Q.2 What are the various toxic factors present in legumes? Discuss any four of them in brief. **10**
- Q.3 What is operation flood? Discuss all the phases of operation flood in detail. **10**
- Q.4 What is SGC? Discuss the roles and responsibilities of SGC in detail. **10**

**PART-B**

Answer the following questions in brief.

- Q.5 Name and discuss about any two oil products. **5**
- Q.6 Discuss the major objectives of packaging in short. **5**
- Q.7 What are different methods employed in drying of cereals? **5**
- Q.8 Write about the various types of post-harvest diseases of fruits. **5**
- Q.9 Depict the steps involved in rice milling process using a flow chart. **5**
- Q.10 How are instant cooking legumes prepared? **5**
- Q.11 Write short notes on **any two**:
- a) Germination.
  - b) Fermentation.
  - c) Agglomeration.
- 2<sup>1</sup>/<sub>2</sub>x2**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - Fourth Semester  
**NUTRITION FOR HEALTH, FITNESS AND SPORTS (BND-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 holistic approach to the management of fitness and health. **10**
- Q.2 Discuss the types of sports drinks in detail. **10**
- Q.3 Compute the body fat percentage:  
a) Female: Triceps - 20.5 mm  
              Subscapular - 19 mm  
b) Male : Triceps - 24.5 mm  
              Subscapular - 23 mm **5x2**
- Q.4 Discuss yoga as an alternative system for health and fitness. **10**

**PART-B**

Write short notes on the following:

- Q.5 Location of chakras. **5**
- Q.6 Mobilization of fuel stores during exercise. **5**
- Q.7 Nutritional requirements of sports person. **5**
- Q.8 Skin fold measurements. **5**
- Q.9 Components of health status. **5**
- Q.10 Body mass index. **5**
- Q.11 Gunas and satvic food. **5**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - Fourth Semester  
**ENTREPRENEURSHIP MANAGEMENT (BND-404)**

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 entrepreneurship and entrepreneur. Write the characteristics of a successful entrepreneur in detail. **10**
- Q.2 Explain the Government of India's policy towards the promotion of entrepreneurship. **10**
- Q.3 Give in detail the process of market survey. **10**
- Q.4 What do you understand by performance appraisal? Explain various objectives of performance appraisal with suitable examples. **10**

**PART-B**

- Q.5 Why there is a need of entrepreneurship in India? **5**
- Q.6 Write a short note on advertising of a product. **5**
- Q.7 What are the various functions of an entrepreneur? **5**
- Q.8 Discuss the process of resource mobilization in an enterprise. **5**
- Q.9 What are the two major approaches to project identification? Discuss any one in detail. **5**
- Q.10 Enlist five institutions which provide financial support to the entrepreneurs. **5**
- Q.11 Write a note on fund flow analysis. **5**

# End Semester Examination, Dec. 2015

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 intoxication? Discuss any one type of food intoxication in detail. **10**
- Q.2 Write a detailed note on various components of a bacterial cell. **10**
- Q.3 Discuss any two techniques used for presentation of food products in food industries. **10**
- Q.4 Enlist of functions of any two food control enforcement agencies. **10**

### **PART-B**

- Q.5 Discuss the spoilage of any one food group in chart. **5**
- Q.6 Enlist the major characteristics of food indicators. **5**
- Q.7 Differentiate between the forms of fungi. **5**
- Q.8 Discuss the various sources of contamination in food industries. **5**
- Q.9 Give the industrial importance of yeast in chart. **5**
- Q.10 Enumerate the steps involved in food borne disease outbreak cycle. **5**
- Q.11 What are the various factors responsible for spoilage of food? **5**

# End Semester Examination, Dec. 2015

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

## STATISTICS AND RESEARCH METHODOLOGY (THEORY) (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 Explain the difference between collection of data through questionnaires and schedules. **10**

Q.2 Calculate median from the data given below:

Marks	0-10	10-30	30-60	60-80	80-90
No. of Students	5	15	30	8	2

**10**

Q.3 What is the meaning of measurement in research? What difference does it make whether we measure in terms of a nominal, ordinal, interval or ratio scale? Explain with examples. **10**

Q.4 Calculate mode of the following series:

Class Interval	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Frequency	10	12	18	30	16	6	8

**10**

### **PART-B**

Q.5 Define a research problem. Explain techniques involved in defining a research problem. **5**

Q.6 Explain and illustrate the procedure of selecting a random sample. **5**

Q.7 Differentiate between an experiment and a survey method. **5**

Q.8 Distinguish between primary data and secondary data. State various sources of secondary data. **5**

Q.9 Explain the meaning and significance of a research design. **5**

Q.10 What is skewness? Explain the various measures of skewness. **5**

Q.11 Explain Karl Pearson's coefficient of correlation in brief. **5**

## End Semester Examination, Dec. 2015

B. Sc. (N & D) – Sixth Semester

### FOOD SCIENCE (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 followings:  
a) Homogenization.  
b) Gel formation.  
c) Rancidity.  
d) Germination. **2½x4**
- Q.2 Describe the effect of heat on fats. **10**
- Q.3 What are the water soluble/ water insoluble pigments present in vegetables and fruits? **10**
- Q.4 Describe sensory evaluation and factors affecting it in detail. **10**

#### **PART-B**

- Q.5 Explain the structure and composition of an egg. **5**
- Q.6 Explain the selection process of a fish. **5**
- Q.7 Discuss:  
a) Dextrinization.  
b) Winterization. **5**
- Q.8 Differentiate between enzymatic and non-enzymatic browning. **5**
- Q.9 Explain the properties of sugar. **5**
- Q.10 What are the various toxic constituents present in the pulses? **5**
- Q.11 Explain the process of scum formation and scorching of milk in brief. **5**

**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - Sixth Semester  
**INSTITUTIONAL FOOD ADMINISTRATION (BND-602)**

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 kitchen spaces in detail.                                 | <b>10</b> |
| Q.2 | Write about recipe standardization in detail.                     | <b>10</b> |
| Q.3 | Describe cost control in catering institutions in detail.         | <b>10</b> |
| Q.4 | What do you understand by food safety? Discuss the E's of safety. | <b>10</b> |

**PART-B**

- |      |   |          |
|------|---|----------|
| Q.5  | Write short note on planning menus for hospitals.   | <b>5</b> |
| Q.6  | Discuss service areas in brief.   | <b>5</b> |
| Q.7  | Briefly explain types of budget in any food service institutions.   | <b>5</b> |
| Q.8  | Write down the points to be kept in mind while selecting and buying of fruits and vegetables and fats & oils. | <b>5</b> |
| Q.9  | Discuss principles of employee benefits in brief.   | <b>5</b> |
| Q.10 | Write short note on furnishing of dining room.  | <b>5</b> |
| Q.11 | Explain method of writing recipes in brief.   | <b>5</b> |



**End Semester Examination, Dec. 2015**  
B. Sc. (N & D) - First Semester  
**HERBS AND HOME REMEDIES (BN&D-GE-01)**

Time: 3 hrs

Max Marks: **50**

No. of pages: 1

Note: Attempt any **TWO** questions from **Part-A** and **TWO** questions from **Part-B**. **Q.1 is compulsory**. All questions carry equal marks.

Q.1 Write any ten points as to why you have selected herbs and home remedies as a subject for study. **10**

**PART-A**

Q.2 Give the categorization of herbs based on their active constituents. **10**

Q.3 Discuss the use and benefits of following plants as herbs:  
a) Rosa centifolia.  
b) Calotropis gigantea. **5x2**

Q.4 Discuss in detail about herb gardening. **10**

**PART-B**

Q.5 Discuss the nutritional value of herbs in detail. **10**

Q.6 Write five home remedies for each:  
a) Fever.  
b) Common cold. **10**

Q.7 Discuss the beneficial use of herbs as a food supplement. **10**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**ANATOMY-I (BPT-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 carry equal marks.

Q.1 Write short notes on the following:

- a) Enumerate intrinsic muscles of hand with its nerve supply and action.
- b) Musculocutaneous nerve.
- c) Clinical importance of planter arches in foot.
- d) Branches of axillary artery.

**5x4**

**PART-A**

Q.2 Explain brachial plexus with its labeled diagram and clinical anatomy.

**20**

Q.3 Describe bronchopulmonary segment of lungs with clinical anatomy and labeled diagrams.

**20**

Q.4 Describe structure of heart with chambers, coverings, surfaces, borders with clinical anatomy and labeled diagrams.

**20**

**PART-B**

Q.5 Write short notes on:

- a) Cubital fossa.
- b) Femoral Hernia and inguinal canal.

**20**

Q.6 Write short notes on:

- a) Respiratory movements.
- b) Classification of bones with examples.

**20**

Q.7 Write short notes on:

- a) Saphenous vein.
- b) Shoulder joint.

**20**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**PHYSIOLOGY-I (BPT-102)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1 is compulsory**. Marks are indicated against each question.

- Q.1 a) Write normal values of RBC in adult males and females.  
b) Define jaundice.  
c) What is phagocytosis?  
d) Write functions of endoplasmic reticulum.  
e) Write the names of intrinsic innervations of GIT.  
f) Name the two hormones which regulate pancreatic juice secretion.  
g) Write the names of components of reflex arc.  
h) Define cardiac output.  
i) Define oxy-haemoglobin and reduced haemoglobin.  
j) Write names of various plasma proteins. **2x10**

**PART-A**

- Q.2 With the help of a labeled diagram explain the structure of neuro-muscular junction. Give sequence of events at neuro-muscular junction during transmission of nerve impulse. **15**
- Q.3 Define BP. Give its normal value. What are the components of blood pressure. Describe short term regulation of BP. **15**
- Q.4 Give classification of WBC. Describe structure and functions of each type of WBC. **15**
- Q.5 Describe structure of cell membrane. Explain its functions add a note on facilitated diffusion. **15**

**PART-B**

- Q.6 Describe normal spread of electrical impulse in the heart. **5**
- Q.7 Write a note on Rh-blood group and its significance. **5**
- Q.8 What is RMP? Discuss genesis of RMP. **5**
- Q.9 Describe composition and functions of saliva. **5**
- Q.10 Explain peristalsis and its function. **5**
- Q.11 Describe stages of deglutition. **5**
- Q.12 Write a note on dietary fibres and their functions. **5**
- Q.13 Differentiate between isotonic and isometric muscle contractions. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**PHYSIOLOGY-I (BPT-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
- a) Write normal values of RBC in adult males and females.
  - b) Define Jaundice.
  - c) What is phagocytosis?
  - d) Write functions of endoplasmic reticulum.
  - e) Write the names of intrinsic innervations of GIT.
  - f) Name the two hormones which regulate pancreatic juice secretion.
  - g) Write the names of components of reflex arc.
  - h) Define cardiac output.
  - i) Define oxy-hemoglobin and reduced hemoglobin.
  - j) Write names of various plasma proteins.

**2x10**

**PART-A**

- Q.2 With the help of a labeled diagram explain the structure of neuro-muscular junction. Give sequence of events at neuro-muscular junction during transmission of nerve impulse. Add a note on myasthenia gravis. **20**
- Q.3 Define B.P. Give its normal value. Describe the components of B.P. Explain short term regulation of B.P. **20**
- Q.4 Describe structure of cell membrane. Explain its functions. Differentiate between facilitated diffusion and active transport. Give example of each. **20**

**PART-B**

- Q.5 Describe molecular basis of muscle contraction. Differentiate between isotonic and isometric muscle contractions. **20**
- Q.6 Write about Rh-blood group and its significance. Describe mechanism of blood coagulation. **20**
- Q.7 With the help of a labeled diagram describe cross section of GIT showing different layers of wall. Describe stages of deglutition. **20**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**BIOCHEMISTRY (BPT-103)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1 is compulsory**. Marks are indicated against each question.

- Q.1 Explain the following:
- a) Pellagra
  - b) Denaturatien
  - c) Benedict's test
  - d) Cholesterol
  - e) Fluorosis
  - f) Creative phosphokinase
  - g) Z-DNA
  - h) Significance of HMP pathway
  - i) Reducing sugars
  - j) Cyanocobalamine
- 2x10**

**PART-A**

- Q.1 Enumerate liver function test and describe in detail with clinical significance. **15**
- Q.2 What is the normal P<sup>H</sup> of the blood? Explain the role of plasma buffers and renal mechanisms in the maintance of acid-base balance. **15**
- Q.3 Describe the process of Glycolysis. How many ATP molecules are formed in aerobic and anaerobic conditions? Add a note on the regulation of glycolysis. **15**
- Q.4 Describe the sources, biochemical functions, requirement and deficiency manifestations of vitamin A. **15**

**PART-B**

Write short notes on:

- Q.5 Urea clearance. **5**
- Q.6 Functions of plasma proteins. **5**
- Q.7 Essential fatty acids. **5**
- Q.8 Gout **5**
- Q.9 Compitotive inhibition **5**
- Q.10 Co-enzymes and its role **5**
- Q.11 BMR and the factors affecting BMR. **5**
- Q.12 Generate code. **5**

# End Semester Examination, Dec. 2015

Bachelor of Physiotherapy – First Semester

## BIOCHEMISTRY (BPT-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 following:

- a) Pellagra.
- b) Functions of plasma proteins.
- c) Denaturation.
- d) Essential fatty acids.
- e) Gout.
- f) Genetic code.
- g) Cholesterol.
- h) Z-DNA.
- i) Cyanocobalamine.
- j) BMR.

**2x10**

### **PART-A**

Q.2 Describe the process of Glycolysis. How many ATP molecules are formed in aerobic and anaerobic conditions? Add a note on the regulation of Glycolysis. **20**

Q.3 Describe the sources, biochemical functions and deficiency manifestations of fat soluble vitamins. **20**

Q.4 Write short notes on the following:

- a) Classify enzymes with examples.
- b) Explain the mechanism of action of enzymes.
- c) Mention the different types of enzymes inhibition.
- d) Explain the diagnostic uses of enzymes.

**5x4**

### **PART-B**

Q.5 a) Enumerate liver function test and describe in detail with clinical significance. **12**  
b) Explain the significance of blood urea and serum creatinine. **8**

Q.6 What is the normal P<sup>H</sup> of the blood? Explain the role of plasma buffers and renal mechanisms in the maintenance of acid-base balance. **20**

Q.7 What is the normal blood calcium level? What are the mechanisms by which calcium homeostasis is maintained? **20**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**SOCIOLOGY (BPT-105)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: **Q.1 is compulsory.** Attempt any **THREE** questions from **Part A** and **SEVEN** questions **from Part B.** Marks are indicated against each question.

- Q.1 Write short notes on:
- a) Sociology
  - b) Prostitution
  - c) Questionnaire method of studying sociology
  - d) Population explosion
  - e) Work in social context
  - f) Anticipatory socialization
  - g) Family
  - h) Juvenile delinquency
  - i) Brain drain
  - j) Alcoholism
- 2x10**

**PART-A**

- Q.2 Discuss the relationship of sociology with other sciences. **15**
- Q.3 What are the various problems of a disabled person in society? Comment on few of them. **15**
- Q.4 Define organization. What are the goals and functions of organization? **15**
- Q.5 Discuss the relationship between culture and disease. How does culture shape the beliefs of a society? **15**

**PART-B**

- Q.5 Write a short note on importance of sociology for health care professional. **5**
- Q.6 Write a short note on socialization **5**
- Q.7 Write a short note on theories of work. **5**
- Q.8 How does social change lead to stress? **5**
- Q.9 Write a short note on relationship of sociology with psychology. **5**
- Q.10 Define social security and social legislation. **5**
- Q.11 Define role? What is role taking? **5**
- Q.12 What is social control? **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**SOCIOLOGY (BPT-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 Write short notes on:

- a) Sociology.
- b) Prostitution.
- c) Questionnaire method of studying sociology.
- d) Population explosion.
- e) Work in social context.
- f) Anticipatory socialization.
- g) Family.
- h) Juvenile delinquency.
- i) Brain drain.
- j) Alcoholism.

**2x10**

**PART-A**

- Q.2 Discuss the relationship of sociology with other sciences. **20**
- Q.3 Discuss the relationship between culture and disease. How does culture shape the beliefs of a society? **20**
- Q.4 How do classify rural and urban community? Discuss their respective health hazards and possible causative factors of these hazards. **20**

**PART-B**

- Q.5 What are the various problems of a disabled person in society? Comment on few of them. **20**
- Q.6 Define an organisation. What are the goals and functions of an organisation? **20**
- Q.7 Define social security and social legislation. What are the various social security measures taken by the governments and societies? **20**



**End Semester Examination, Dec. 2015**  
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 Write very short notes on:

- a) Hooke's Law.
- b) Electromagnetic induction.
- c) Angle of pull.
- d) Centre of mass.
- e) Anatomic position.
- f) Antagonist muscle.
- g) Isotonic contraction.
- h) Ohm's Law.
- i) Archimedes principle.
- j) Viscosity.

**2x10**

**PART-A**

- Q.2 a) Define levers. Give examples of levers in daily life and in human body. **10**  
b) Define pulley. Classify pulleys and give their use in physiotherapy. **10**
- Q.3 a) What is axis and planes? Classify axis and planes and give the movements that are taking place along them. **10**  
b) What is Joint? Classify the joints with examples. **10**
- Q.4 a) What is equilibrium? Give types and factors affecting equilibrium. **10**  
b) Define Newton's Law of motion and its physiotherapy implications. **10**

**PART-B**

- Q.5 a) What is electromagnetic spectrum? Write in detail about the uses and properties of each of the electromagnetic radiations. **10**  
b) Write the principle and use of condensers. **10**
- Q.6 a) Explain Ohm's Law. Give the details of resistance in series and in parallel. **10**  
b) Give types of transformers. **10**
- Q.7 What is electric shock? Write the causes of electric shock in physiotherapy department along with its prevention and management. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**ADVANCED BASIC MEDICAL SCIENCE IN MUSCULOSKELETAL**  
**(MPTM-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
- a) Main branches of lumbar plexus.
  - b) Trapezius upper fiber-origin and insertion.
  - c) Apparent limb length measurement.
  - d) MUAP.
  - e) Types of nerve injury.
  - f) Klumpky's palsy.
  - g) Carrying angle.
  - h) Mechanoreceptors.
  - i) Content of cubital fossa.
  - j) Sacco mere.

**2x10**

**PART-A**

- Q.2 Define osteomyelitis. What is the pathophysiology and clinical sign symptoms of the disease? **20**
- Q.3 Explain in detail about the metabolic disease of bone. What is the role of nutrition in bone disease? **20**
- Q.4 What are degenerative joint disease? Explain osteoarthritis in detail along with its pathophysiology. **20**

**PART-B**

- Q.5 Explain core muscle. What is the importance of core muscle in lumbar stabilization? Explain also the muscles of lumbar spine which help stabilizing it. **20**
- Q.6 Explain the following:  
a) Lumbopelvic rhythm.  
b) Scapulothoracic rhythm. **10x2**
- Q.7 Explain the muscle contraction phenomenon. Draw diagram of sarcomere. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**KINESIOLOGY AND BIOMECHANICS (MPTM-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 Write very short notes on:

- a) Ulnar positive and negative variance.
- b) Costotransverse joint
- c) Ligaments of shoulder complex.
- d) Line of gravity.
- e) Lever of power.
- f) Force.
- g) Law of inertia.
- h) Law of reaction.
- i) Triangular fibro cartilage complex.
- j) Ergonomics.

**2x10**

**PART-A**

- Q.2 Define GAIT. Discuss in detail about the determinants of GAIT. **20**
- Q.3 Describe the kinetics and kinematics of cervical region. **20**
- Q.4 Discuss sagittal and frontal plane analysis of joint reaction force at hip joint in stable equilibrium position. **20**

**PART-B**

- Q.5 Explain stress-strain curve of tendons. Describe the effects of physical conditions and biological factors on mechanical properties of tendons and ligaments. **20**
- Q.6 Describe scapula-humeral rhythm and its importance. What do you understand by screw home mechanism and name the muscles for locking and unlocking the joint. **20**
- Q.7 Differentiate between running and walking GAIT. Explain in detail arm swing movement, trunk and foot mechanics in running. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**PHYSIOTHERAPEUTICS - I (MPTM-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
- a) What is mobilization?
  - b) Explain convex-concave rule.
  - c) Explain manual muscle testing for latissimus dorsi.
  - d) Explain goniometry for pronation and supination of forearm.
  - e) What is ballistic stretching?
  - f) What all deformities can occur at knee due to faulty postures?
  - g) Explain D, flexion and its indications.
  - h) Explain lower cross syndrome.
  - i) What are indications for low frequency currents?
  - j) Explain Lewis hunting reaction.
- 2x10**

**PART-A**

- Q.2 Define pain. Explain different theories of pain, its modulation and assessment in detail. **20**
- Q.3
- a) What is re-education and strengthening? **2**
  - b) Explain in detail effects and uses of:
    - i) Dynamic exercises.
    - ii) Plyometric exercises.
    - iii) Isokinetic exercises.
    - iv) Kinetic chain exercises.
    - v) Isometric and isotonic exercises.
    - vi) Progressive resisted exercises.**3x6**
- Q.4
- a) Define neuromuscular control and factors affecting it. Also explain evaluation and examination of impaired balance along with its management in detail. **15**
  - b) Explain principles and applications of neuromuscular facilitation. **5**

**PART-B**

- Q.5 Explain in detail about hydrotherapy and its various modalities along with recent advances. **20**
- Q.6 Discuss in detail about SWD and MWD along with its recent advances. **20**
- Q.7 Explain in detail about muscle fatigue and various relaxation techniques. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Sports) – First Semester  
**KINESIOLOGY AND BIOMECHANICS (MPTS-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 Write very short notes on:

- a) Define lever.
- b) Equilibrium.
- c) Motion.
- d) Line of gravity.
- e) Torque.
- f) Force.
- g) Law of inertia.
- h) Law of reaction.
- i) Name the properties of skeletal muscle.
- j) Ergonomics.

**2x10**

**PART-A**

Q.2 Define biomechanics. Discuss the importance of biomechanics in the field of sports physiotherapy. **20**

Q.3 Describe the kinetics and kinematics of cervical region. **20**

Q.4 Discuss the structure of a synovial joint with help of a diagram and add a note on hydrostatic lubrication present inside it. **20**

**PART-B**

Q.5 Define GAIT. Discuss in detail about the determinants of GAIT and discuss the difference between running and walking GAIT. **20**

Q.6 Highlight the role of environment assessment in prescribing ergonomic care. Write in short about the WRMSD's. **20**

Q.7 Write in short notes on:

- a) Enumerate the various factors affecting the stability of a human body.
- b) Write short note on scapula-humeral rhythm and screw home mechanism and their importance. **10x2**

**End Semester Examination, Dec. 2015**  
**MPT – First Semester**  
**ADVANCED BASIC MEDICAL SCIENCE IN SPORTS (MPTS-101)**

Time: 3 hrs

Max Marks: **100**

No. of pages: *1*

Note: ***Q.1 is compulsory. Attempt any THREE questions from PART A and SEVEN questions from PART B. Marks are given in against each.***

- Q.1 a) Write the content of Cubital fossa.  
b) Differentiate between fast and slow twitch fiber.  
c) Write Force-Velocity relationship.  
d) Define Osteomyelitis  
e) Use of steroids. **4×5**

**PART-A**

- Q.2 Explain the formation of peripheral nerve and describe briefly the properties of nerve fiber. **15**
- Q.3 Explain the contractile mechanism of skeletal muscle. **15**
- Q.4 Explain the Physiology of degenerative joint diseases. **15**
- Q.5 Explain the role of drugs used in pain modulation. **15**

**PART-B**

- Q.6 Explain the length – Tension relationship. **5**
- Q.7 Write a note on Lumbar Plexus. **5**
- Q.8 Write the role of Muscle relaxant in rehabilitation. **5**
- Q.9 Enumerate the content of Cubital fossa. **5**
- Q.10 Classification joint on the basis of structure. **5**
- Q.11 Write a note on Biochemical changes after strength training. **5**
- Q.12 Explain Scapulo-humeral Rhythm. **5**
- Q.13 Explain the circulation of C.S.F. **5**

# End Semester Examination, Dec. 2015

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

## FOOD MICROBIOLOGY (MN & D-105)

Time: 3 hrs

Max Marks: **50**

No. of pages: 1

Note: Attempt any **TWO** questions from **Part-A** and **TWO** questions from **Part-B**. **Q.1** is **compulsory**. All questions carry equal marks.

Q.1 Discuss in detail the diversity of micro-organisms seen in nature. **10**

### **PART-A**

Q.2 Differentiate between a prokaryotic and an eukaryotic cell using a relevant diagram. **10**

Q.3 Write a detailed note on various components of a bacterial cell. **10**

Q.4 Draw and discuss the growth curve of a bacterial cell cycle. **10**

### **PART-B**

Q.5 What is freezing? How is it important in food industries? **10**

Q.6 Discuss the apparent health benefits of fermented foods. **10**

Q.7 What are the basic principles of food preservation? Discuss any one type of preservation in detail. **10**

# End Semester Examination, Dec. 2015

## M. Sc. (N & D) - First Semester PHYSIOLOGY (MN &D-102)

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **TWO** questions from **Part-A** and **TWO** questions from **Part-B**.  
**Q.1 is compulsory. All questions carry equal marks.**

Q.1 Explain the interrelationship of nutrition and physiology in detail. **20**

### **PART-A**

Q.2 Write short notes on:

- a) Junctional complexes.
- b) Active transport mechanism in cell.
- c) Blood groups.
- d) Hemoglobin with structure.

**5x4**

Q.3 a) Discuss the process of digestion and absorption in the gastrointestinal tract. **10**  
b) Explain the function of liver. **10**

Q.4 a) Describe the basic properties of nerves and receptor organs in detail. **10**  
b) Describe ECG and CSF in brief. **10**

### **PART-B**

Q.5 Explain the anatomy of respiratory system with its functions. **20**

Q.6 a) With the help of a diagram, describe the anatomy of heart. **10**  
b) Write notes on cardiac output and blood pressure. **10**

Q.7 a) Describe the structure and functions of kidneys. **15**  
b) What is GFR? **5**



# End Semester Examination, Dec. 2015

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 principles and methods of food preservation in detail. **20**

### **PART-A**

Q.2 Write short notes on the following:

- a) Energy balance.
- b) Complete and incomplete protein.
- c) Preservatives.
- d) Lactation.
- e) Placenta.

**4x5**

Q.3 Explain history of nutrition. Describe the work of two scientists who worked on respiration in detail. **20**

Q.4 Explain different methods to assess a protein quality. **20**

### **PART-B**

Q.5 Differentiate between the following:

- a) Basal metabolism and thermic effect of food.
- b) Microwave cooking and solar cooking.
- c) Energy balance and energy expenditure.
- d) Complete and incomplete protein.

**20**

Q.6 What are food choices? Explain the factors affecting it. Also describe the food choices of the area. **20**

Q.7 a) Fill in the blanks:

- i) A lactating mother requires \_\_\_\_\_ kCal if she is a moderate worker.
- ii) A pregnant woman requires \_\_\_\_\_ mg/day of calcium.
- iii) A full term placenta measures \_\_\_\_\_ inches.

b) Complete the following sentences:

- i) The foods included as galactogogues are \_\_\_\_\_.
- ii) Phytochemicals are \_\_\_\_\_.
- iii) Functions of nutrition are \_\_\_\_\_.
- iv) Water is considered as nutrient because \_\_\_\_\_.
- v) In old age the diet should be \_\_\_\_\_.

**20**

# End Semester Examination, Dec. 2015

## 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) Competitive inhibition.
  - b) Fermentation.
  - c) Nitrogen fixation.
  - d) Erythropoiesis.
  - e) Growth hormones.
- 4x5**

### **PART-A**

- Q.2 Discuss the energy production from glucose in detail. **20**
- Q.3 a) Explain the production of urea in detail. **10**  
b) How does coagulation of blood occurs in body? **10**
- Q.4 a) Explain the synthesis of cholesterol in detail. **10**  
b) Define hormones. Describe their mode of action. **10**

### **PART-B**

- Q.5 Write short notes on following:
- a) Kinetics of enzyme.
  - b) Polysaccharides.
  - c) Structure of proteins.
  - d) Types of lipids.
- 5x4**
- Q.6 a) Differentiate between water soluble and fat soluble vitamins. **10**  
b) Discuss the biochemical functions of vitamin A, E, B and C. **10**
- Q.7 Discuss the biochemical functions of the following:
- a) Iron.
  - b) Calcium.
  - c) Sodium.
  - d) Iodine.
- 5x4**

**End Semester Examination, Dec. 2015**  
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 relationship between food, nutrition, health and disease? Also describe the scope of food and nutrition in current scenario? **20**

**PART-A**

- Q.2 Describe the classification of nutrients, their sources, functions and deficiency diseases in detail. **20**

- Q.3 Write short notes on **any four**:
- a) Food pyramid.
  - b) Growth chart for girls.
  - c) Nutrient need of any adolescent boy.
  - d) Reference man and woman.
  - e) Recommended dietary allowances. **4x5**

- Q.4 Describe the nutrient needs, dietary needs and socio-cultural aspects for the pre-school children. **20**

**PART-B**

- Q.5 Describe all the physiological changes that occur during pregnancy. Also describe the nutritional needs and recommended dietary allowances during pregnancy. **20**

- Q.6 Write short notes on **any four**:
- a) Advantages of breast feeding.
  - b) Gestational diabetes.
  - c) Nutritional needs and RDA for an elderly man.
  - d) Nutrition for a person working in an industry.
  - e) What is physical activity ratio (PAR)? **4x5**

- Q.7 Describe the nutrient needs and recommended dietary allowances for an adult woman in detail along with her feeding pattern. **20**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - First Semester  
**NEUTRACEUTICALS AND HEALTH FOODS (MN&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 What do you understand by term 'nutraceuticals'? Explain in detail. **10**

**PART-A**

Q.2 Discuss the role of nutraceuticals in preventing or controlling diseases. **10**

Q.3 Write a note on probiotics in detail **10**

Q.4 Discuss types of prebiotics and their effects on gut microbes. **10**

**PART-B**

Q.5 Define functional foods. List any ten functional foods in regard to their benefits in Indian diet. **10**

Q.6 What are the marketing and regulatory issues related to functional food. Discuss in detail. **10**

Q.7 Explain research frontiers in functional foods. **10**

**End Semester Examination, Dec. 2015**  
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 any **TWO** questions from **Part-A** and **TWO** questions from **Part-B**. **Q.1** is **compulsory**. All questions carry equal marks.*

- Q.1 "The subject of nutrition science is all embracing in the sense that it concerns and teaches many aspects of human life". In the light of this statement discuss how the character of the subject can be maintained in Indian universities. **10**

**PART-A**

- Q.2 Explain the different principles which should be kept in mind while framing a curriculum. **10**
- Q.3 Enumerate the aims of education at the university stage. **10**
- Q.4 What do you mean by agencies of education? Describe its different classifications in brief. **10**

**PART-B**

- Q.5 Explain the necessary steps in lesson planning. **10**
- Q.6 Define evaluation. What is its importance? **10**
- Q.7 Write short notes on:  
a) Types of teaching aids.  
b) Unit planning. **5x2**

**End Semester Examination, Dec. 2015**  
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 current challenges to food safety in India in detail. **10**

**PART-A**

Q.2 Discuss biological and chemical hazards in food industries. **10**

Q.3 Define food adulteration. Discuss principles of food quality assurance in detail. **10**

Q.4 Discuss applications of HACCP in food safety. **10**

**PART-B**

Q.5 Define: consumer, consumer protection and consumer education in detail. **10**

Q.6 Write notes on:

a) Bureau of Indian Standards.

b) Agricultural Produce Act, 1937. **10**

Q.7 Discuss Food Safety and Standards (FSS) Act, 2006 in detail. **10**

**End Semester Examination, Dec, 2015**  
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 Discuss the encouraging and discouraging trends that impact the public health. **10**
- Q.2 Define policy. Discuss policy making strategies in detail. **10**
- Q.3 What are the various current food safety issues in public health nutrition? **10**
- Q.4 Enumerate the impact of informative technology on nutrition practice. **10**

**PART-B**

- Q.5 What are the dietary guidelines given for Indians? **5**
- Q.6 Define the leadership role of public health nutritionists in policy making. **5**
- Q.7 Explain any one community health planning model in brief. **5**
- Q.8 How consumers and food handlers can be educated to assure safe food? **5**
- Q.9 Write a short note on quality improvement in public health. **5**
- Q.10 What are the ethical issues in public health nutrition? **5**
- Q.11 Explain the private and public health sector policies and their influence on public health. **5**

**End Semester Examination, Dec. 2015**  
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 approaches to management. **10**
- Q.2 What are different types of menus in the catering organisation? **10**
- Q.3 Describe the principles of management. **10**
- Q.4 Describe the steps involved in developing kitchen plans with emphasis on work simplification. **10**

**PART-B**

- Q.5 What are the factors affecting selection of equipments? **5**
- Q.6 Describe the methods used for inventory management. **5**
- Q.7 What are the food production systems? **5**
- Q.8 Discuss the effective use of leftover food. **5**
- Q.9 What are the cost-components involved in food service? **5**
- Q.10 Describe budgeting. **5**
- Q.11 Describe absenteeism. **5**



**End Semester Examination, Dec, 2015**  
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 Write a detail note on nutritional therapy given for a cancer patient. **10**
- Q.2 What do you mean by malabsorption syndrome? Discuss any two types of malabsorption syndrome in detail. **10**
- Q.3 What are the clinical features of food allergies? Discuss the mechanism of diagnosis and treatment of food allergies. **10**
- Q.4 What do you mean by disabling diseases? Explain the supportive nutritional care in osteoarthritis. **10**

**PART-B**

- Q.5 Write the signs, symptoms and nutritional care for AIDS patients. **5**
- Q.6 Discuss metabolic defects, clinical symptoms and nutritional management of phenylketonuria. **5**
- Q.7 Write a note on metabolic defect and dietetic management of galactosemia. **5**
- Q.8 Explain causes and management of Wilson's disease. **5**
- Q.9 Discuss the goals of nutrition therapy to overcome the complications of chronic alcoholism. **5**
- Q.10 Write a note on Rheumatoid Arthritis and supportive nutritional care. **5**
- Q.11 Explain the nutritional care of terminally ill patients. **5**

**End Semester Examination, Dec. 2015**  
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 Explain the various steps involved in programme planning process. **10**
- Q.2 What are the various steps involved in designing of MIS for a health programme. **10**
- Q.3 Write a detailed note on millennium development goals. **10**
- Q.4 Discuss the various factors which promote community involvement and participation in detail. **10**

**PART-B**

- Q.5 Depict the relationship between health and development using relevant cycle. **5**
- Q.6 What is formative evaluation? Discuss the key roles of formative evaluation. **5**
- Q.7 Enumerate the various source of information for the health care sector. **5**
- Q.8 Discuss the various criteria for evaluating a nutrition programme giving suitable examples. **5**
- Q.9 Enlist the merits and demerits of decentralized programming. **5**
- Q.10 What is right based approach? Discuss its two main components. **5**
- Q.11 Write short notes on **any two**:
- a) Development.
  - b) Surveillance.
  - c) Top – Down Approach.
- 2<sup>1</sup>/2x2**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Fourth Semester  
**NUTRITION IN EMERGENCIES AND DISASTERS (MNC-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 Discuss natural disasters resulting in emergency situation. Also give any one illustration using case studies from Indian subcontinent. **10**
- Q.2 Write about major deficiency diseases and their management in emergency situation. **10**
- Q.3 Discuss in detail about prevention treatment and control of communicable diseases in emergency situation. **10**
- Q.4 Explain in brief about public nutrition approach to tackle nutritional problems in emergencies. **10**

**PART-B**

- Q.5 Explain the causes of malnutrition in emergency situations. **5**
- Q.6 Write a brief note on protein energy malnutrition (PEM). **5**
- Q.7 Discuss anthropometric assessment of nutritional status of emergency affected population. **5**
- Q.8 Explain the local food rehabilitation. **5**
- Q.9 Explain the role of feeding centers. **5**
- Q.10 How will you assess food needs in emergency situation. **5**
- Q.11 Write a short note on mass and supplementary feeding. **5**

**End Semester Examination, Dec. 2015**  
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 | Define malnutrition. How it is related to growth retardation?                      | <b>10</b> |
| Q.2 | Discuss the biochemical basis of absorption of products of digestion.              | <b>10</b> |
| Q.3 | Explain in detail the nutritional significance of hepatocytes and their functions. | <b>10</b> |
| Q.4 | Discuss the biochemical aspects of respiration.                                    | <b>10</b> |

**PART-B**

- |      |   |          |
|------|---|----------|
| Q.5  | Define fasting. What is the role of liver during fasting?     | <b>5</b> |
| Q.6  | Why cholesterol and bile are important for biological system? | <b>5</b> |
| Q.7  | How gene expression can be regulated?                         | <b>5</b> |
| Q.8  | How does biosynthesis of hemoglobin takes place?              | <b>5</b> |
| Q.9  | Define PCR and detoxification.                                | <b>5</b> |
| Q.10 | Briefly explain whipples syndrome/disease.                    | <b>5</b> |
| Q.11 | What is the nutritional significance of hepatocytes?          | <b>5</b> |

**End Semester Examination, Dec, 2015**  
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 | Discuss the classification of enzymes as per IUB system.                    | <b>10</b> |
| Q.2 | Describe the reactions in the syntheses of urea.                            | <b>10</b> |
| Q.3 | Describe the hexose monophosphate shunt and add a note on its significance. | <b>10</b> |
| Q.4 | Discuss the classification of proteins with suitable examples.              | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | Briefly give the mechanism of enzyme action.                   | <b>5</b> |
| Q.6  | Write a short note on steroid hormones                         | <b>5</b> |
| Q.7  | Write a short note on beta-oxidation of fatty acids.           | <b>5</b> |
| Q.8  | Give an account of functions of hemoglobin.                    | <b>5</b> |
| Q.9  | Briefly discuss the functional classification of proteins.     | <b>5</b> |
| Q.10 | What do you mean by mutarotation? Explain with example.        | <b>5</b> |
| Q.11 | Give structure of the following:<br>a) Anylose.<br>b) Maltose. | <b>5</b> |

**End Semester Examination, Dec. 2015**  
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 structure of nephron with the help a of the diagram. | <b>10</b> |
| Q.2 | Describe the physiology of vision.                               | <b>10</b> |
| Q.3 | Explain the cardiac cycle in detail.                             | <b>10</b> |
| Q.4 | Explain the digestion and absorption of food in small intestine. | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | Differentiate between diffusion and osmosis.                   | <b>5</b> |
| Q.6  | Discuss the function of:    a) WBC        b) RBC               | <b>5</b> |
| Q.7  | What is the function of:    a) Bile        b) Pancreatic juice | <b>5</b> |
| Q.8  | Explain the oxygen transport in blood.                         | <b>5</b> |
| Q.9  | What are the factors affecting the heart rate?                 | <b>5</b> |
| Q.10 | Describe GFR.  | <b>5</b> |
| Q.11 | Explain the function of autonomic nervous system.              | <b>5</b> |

**End Semester Examination, Dec, 2015**  
M. Sc. (N & D) - First Semester  
**NUTRITION FOR VULNERABLE AND SPECIAL GROUP (MND-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 Why are recommended allowances set-up? What are the guiding principles used to derive RDA's? **10**
- Q.2 Why is special emphasis laid on nutrition during pregnancy? Plan supplementary food to meet the additional needs of pregnancy. **10**
- Q.3 What are the physiological functions which changes with age? How those changes affect the nutritional intake of senior citizens? **10**
- Q.4 Discuss the factors which need attention to ensure successful lactation. List the advantages of breast-feeding. **10**

**PART-B**

- Q.5 Discuss the importance of food groups and food pyramid. **5**
- Q.6 Discuss the fundamental aspects of meal planning. **5**
- Q.7 How psycho-social influences the food behaviour during adolescence? Explain. **5**
- Q.8 Classify nutrients on the basis of their functions. **5**
- Q.9 Explain the principle and advantages of weaning. **5**
- Q.10 List the RDA chart for adult men and women of India. **5**
- Q.11 Discuss the nutritional management during extreme climatic conditions. **5**

# End Semester Examination, Dec. 2015

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

## **PEDAGOGY, ADMINISTRATION AND ETHICAL ISSUES IN NUTRITION AND DIETETICS (MND-104)**

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 need and importance of lesson planning with suitable examples. **10**
- Q.2 Explain meaning and concept of 'lesson planning'. What factors to be kept in mind while formulating a curriculum. **10**
- Q.3 Define education. Explain with suitable various aims of education in detail. **10**
- Q.4 Explain the process of filing a complaint under Consumer Protection Law. **10**

### **PART-B**

Write short notes on the following:

- Q.5 Code of ethics. **5**
- Q.6 Functions of Nutrition and Dietetics Association. **5**
- Q.7 Factors to be kept in mind while preparing audio visual aids. **5**
- Q.8 Advantages and disadvantages of lecture method. **5**
- Q.9 Meaning and scope of educational psychology. **5**
- Q.10 Importance of privatization of education in today's economy. **5**
- Q.11 What are various agencies of education? Explain any one in detail. **5**



**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) – First Semester  
**FOOD SCIENCE AND NUTRITION (THEORY) (MND-105)**

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 concept of energy balance. Discuss the components of energy balance and what factors affecting it. **10**
- Q.2 Explain the principles of food preservation. Differentiate between spoilage and contamination. **10**
- Q.3 List reasons for cooking the food and explain ways of cooking using air, water and oil as medium. **10**
- Q.4 What are food choices? What are the factors affecting the same? **10**

**PART-B**

- Q.5 Give brief description of history of nutrition research in India. **5**
- Q.6 Complete the following sentences:  
a) Thermic effect of food is \_\_\_\_\_.  
b) Indirect method of estimation of BMR includes \_\_\_\_\_.  
c) Hunger is \_\_\_\_\_.  
d) Functions of nutrients are \_\_\_\_\_. **5**
- Q.7 Define the following:  
a) Phytochemicals                      b) Placenta                      c) Broiling  
d) Microwave cooking                e) Solar cooking **5**
- Q.8 Enlist the nutritional guidelines for old age, middle school and infants. **5**
- Q.9 Fill in the blanks:  
a) \_\_\_\_\_ discovered nature of respiration.  
b) Nutrition research is conducted at \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ in India  
c) \_\_\_\_\_ is associated with discovery of vitamins. **5**
- Q.10 Write short notes on:  
a) BMR                      b) Appetite **5**
- Q.11 What are advantages of lactation? **5**
- Q.12 List the dietary guidelines for a pregnant woman. **5**

## End Semester Examination, Dec. 2015

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 in detail structure of a bacterial cell. **10**
- Q.2 Differentiate between synchronous culture and continuous culture. **10**
- Q.3 Discuss in detail about the different forms of food borne animal parasites. **10**
- Q.4 Write the health benefits of terminated products. **10**

#### **PART-B**

- Q.5 Enumerate the various intrinsic and extrinsic parameters of food that affect microbial growth. **5**
- Q.6 Write a short note on food poisoning. **5**
- Q.7 What are the various methods of food preservation? Discuss any two in detail. **5**
- Q.8 Write about the microbial spoilage of any one:  
a) Fruits and vegetables.  
b) Cereal grains. **5**
- Q.9 Give the classification of algae. **5**
- Q.10 Discuss the reproduction in fungi. **5**
- Q.11 Write a note on various indicators of food microbial quality and safety. **5**

**End Semester Examination, Dec. 2015**  
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 Describe the principles and methodology of ELISA technique in detail. **10**
- Q.2 Discuss the principles of colorimetry with suitable examples. **10**
- Q.3 Explain the working principles of Ion exchange and thin layer chromatography. **10**
- Q.4 Discuss the working of atomic absorptiometry. **10**

**PART-B**

- Q.5 Write short notes on:  
a) Buffers.  
b) Indicators. **2½x2**
- Q.6 Write a short note on gel electrophoresis. **5**
- Q.7 Differentiate between:  
a) Radioactive isotopes and stable isotopes.  
b) Acids and Bases. **2½x2**
- Q.8 What are the applications of Radio Immuno Assay? **5**
- Q.9 How is ELISA important in various investigation techniques? **5**
- Q.10 Write down principles of the following:  
a) Paper chromatography.  
b) Respirography. **2½x2**
- Q.11 Discuss in detail bomb calorimeter. **5**

# End Semester Examination, Dec. 2015

## M. Sc. (N & D) - Second Semester CLINICAL NUTRITION (MND-203)

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) Gestational diabetes mellitus.  
b) Prudent diet.  
c) Hepatic coma.  
d) Azotemia.  
e) Ketoacidosis. **2x5**
- Q.2 Discuss the metabolic changes and nutritional management of tuberculosis in detail. **10**
- Q.3 Explain the acute complications of diabetes in detail. **10**
- Q.4 Explain the dietary management of **any two**:  
a) Chronic renal failure.  
b) Cirrhosis of liver.  
c) Gastritis. **5x2**

### **PART-B**

- Q.5 Describe the therapeutic modifications done in the diet therapy. **5**
- Q.6 Write a short not on dietary management of hypertension. **5**
- Q.7 Explain the MNT for:  
a) Hiatus Hernia.  
b) Osteo arthritis. **2<sup>1</sup>/<sub>2</sub>x2**
- Q.8 Discuss the parenteral mode of feeding with related complications. **5**
- Q.9 Describe the role of fiber in the dietary management of diarrhea and constipation. **5**
- Q.10 Explain the pathophysiology and nutrition management of congestive heart failure. **5**
- Q.11 Describe the component of energy expenditure in calculating energy balance in weight management. **5**

## End Semester Examination, Dec. 2015

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

### SPORTS NUTRITION (MND-204)

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 about the role of fat soluble vitamins in sportsperson.       | <b>10</b> |
| Q.2 | Discuss the macronutrient needs for the physically active individual. | <b>10</b> |
| Q.3 | Discuss the CHO feedings before, during and after exercise.           | <b>10</b> |
| Q.4 | Explain the respiratory exchange ratio.                               | <b>10</b> |

#### **PART-B**

Write short notes on the following:

- |      |   |          |
|------|---|----------|
| Q.5  | Effect of B-vitamins on sports performance. | <b>5</b> |
| Q.6  | Pre-competition meal.                       | <b>5</b> |
| Q.7  | Skin fold measurements.                     | <b>5</b> |
| Q.8  | Food restrictions and exercise.             | <b>5</b> |
| Q.9  | Bulimia nervosa.                            | <b>5</b> |
| Q.10 | Sports drinks.                              | <b>5</b> |
| Q.11 | Respiratory quotient for protein.           | <b>5</b> |

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Second Semester  
**STATISTICS AND RESEARCH METHODOLOGY (MND-205)**

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 The table given below shows the data obtained during outbreak of small pox:

	Attacked	Not Attacked	Total
Vaccinated	31	469	500
Not Vaccinated	185	1315	1500
Total	216	1784	2000

Test the effectiveness of vaccination in preventing the attack from small pox. Test your result with the help of  $\chi^2$  at 5% level of significance. **10**

Q.2 Calculate mean, median and mode for the following data pertaining to marks in statistics out of 140 marks for 80 students in a class:

Marks more than	0	20	40	60	80	100	120
No. of students	80	76	50	28	18	9	3

**10**

Q.3 Explain the significance of a research report and narrate the various steps involved in writing such a report. **10**

Q.4 Enlist different methods of collecting data. Clearly explain the difference between collection of data through questionnaires and schedules. **10**

**PART-B**

Q.5 Explain various types of sampling in detail. **5**

Q.6 Define - Sample size, Mean, Skewness, Mode and Median. **5**

Q.7 How do you define a research problem? Give three examples to illustrate your answer. **5**

Q.8 What is hypothesis? Explain characteristics of hypothesis in brief. **5**

Q.9 Write a short note on ANOVA. **5**

Q.10 The following data give the number of finished articles turned out per day by different number of workers in a factory:

No. of articles	18	19	20	21	22	23	24	25	26	27
No. of workers	3	7	11	14	18	17	13	8	5	4

Find mean and standard deviation of finished articles.

**5**

- Q.11 Write short notes on:
- a) Correlation and regression.
  - b) Two tail test.

**2<sup>1</sup>/<sub>2</sub>x2**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Third Semester  
**FOOD SCIENCE AND PROCESSING (MNF-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 the flesh food technology. Elaborate and explain any five processing technologies of flesh foods with adequate examples. **10**
- Q.2 Define and discuss the major characteristics of the following:  
a) Waxing  
b) Degreening  
c) Solvent extraction process  
d) Quick cooking legumes  
e) Parching **10**
- Q.3 Explain in detail the processing of cheese. Enlist different types of cheese and technology behind their manufacturing. **10**
- Q.4 Explain the oilseed extraction process in detail. **10**

**PART-B**

- Q.5 Complete the following sentences:  
a) Pucca Kothis are \_\_\_\_\_.  
b) RB bins include \_\_\_\_\_.  
c) Drying of cereals is normally done \_\_\_\_\_.  
d) Agglomeration is \_\_\_\_\_.  
e) Pressing is done \_\_\_\_\_. **5**
- Q.6 Differentiate between the following:  
a) Homogenization and sterilization.  
b) Cryovac method and chamber method.  
c) Casings and smoked meats.  
d) Scalding and defeathering.  
e) Bulk storage and bag storage. **5**
- Q.7 Give reason for the following:  
a) In irradiation of meats, the meat is not cooked.  
b) Fruit and nuts added after homogenization in preparation of ice creams.  
c) Different cheese have different flavors.  
d) Pasteurization improves keeping quality of milk.  
e) Butter has less fat than ghee. **5**
- Q.8 Explain different processing technologies of legumes. Enlist and discuss five of them. **5**
- Q.9 Explain the processing of butter. **5**
- Q.10 Explain the different storage structures for cereal grains. **5**



- Q.11 Explain different toxic factors in legumes. **5**
- Q.12 Explain the by-products of rice milling. **5**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Third Semester  
**FOOD SAFETY AND QUALITY CONTROL (MNF-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 Define HACCP. Justify "HACCP as a method to prevent food borne diseases". **10**
- Q.2 Explain the toxicological effects of various naturally occurring toxicants. **10**
- Q.3 What do you mean by sensory evaluation? Discuss difference test and rating tests in brief. **10**
- Q.4 How food additives are useful in the colour and flavour enhancement of foods? **10**

**PART-B**

- Q.5 Give various functions of food packaging. **5**
- Q.6 Write a short note on 'antioxidants'. **5**
- Q.7 Explain the microbiological hazards in food safety. **5**
- Q.8 Explain quality assurance in association with food. **5**
- Q.9 What are advantages and disadvantages of objective evaluation? **5**
- Q.10 What is the use of texturometer in physical evaluation of foods? **5**
- Q.11 Why is food labeling important for regulation of food quality? **5**

**End Semester Examination, Dec. 2015**  
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 is a new product development? Explain its classification. **10**
- Q.2 Discuss in detail about the new products in food science industry. **10**
- Q.3 Discuss in detail different phases in new food product development. **10**
- Q.4 How can one test the shelf life of the new products? **10**

**PART-B**

- Q.5 What are the internal and external sources of ideas for generation of new products? **5**
- Q.6 Write short note on plant location and financing the project as an entrepreneur. **5**
- Q.7 Explain Ohmic heating in detail. **5**
- Q.8 Explain the different types of food packaging materials. **5**
- Q.9 Discuss test marketing. **5**
- Q.10 Give any two examples which describes the introduction of a new product in the market. **5**
- Q.11 Write a short note on food safety. **5**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Fourth Semester  
**ADVANCED FOOD SCIENCE AND CHEMISTRY (MNF-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 processing of wines and beer in detail. | <b>10</b> |
| Q.2 | Discuss protein hydrolysates in detail.              | <b>10</b> |
| Q.3 | Write the classification of carbohydrates.           | <b>10</b> |
| Q.4 | Give the role of enzymes in waste management.        | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | Explain the relationship between viscosity and temperature by WLF equation.                      | <b>5</b> |
| Q.6  | Write a short note on immobilized enzymes in food processing.                                    | <b>5</b> |
| Q.7  | Write short notes on <b>any two</b> :<br>a) Rancidity.<br>b) Air drying.<br>c) Irradiated foods. | <b>5</b> |
| Q.8  | Explain the relationship between water activity and storage life of foods.                       | <b>5</b> |
| Q.9  | Discuss in brief about lipid-protein complexes.  | <b>5</b> |
| Q.10 | Write the classification of enzymes into six main classes.                                       | <b>5</b> |
| Q.11 | Write a note on genetically modified foods.  | <b>5</b> |

**End Semester Examination, Dec. 2015**  
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 **SIX** questions from **Part-B**.

**PART-A**

- Q.1 Explain the following food products:  
a) Parboiled rice.  
b) Gelatin.  
c) Butter.  
d) Cheese.  
e) Skim milk. **2x5**
- Q.2 Explain the importance and storage of main crops grown in the country. **10**
- Q.3 Explain the changes occurring during freezing and discuss the choice of final temperature for frozen foods. **10**
- Q.4 What are the physiological changes and biochemical changes occurring during ripening, handling and storage of fruits and vegetables? **10**

**PART-B**

- Q.5 Define:  
a) Flavour enhancers.  
b) Antimicrobial agent.  
c) Chelating agents.  
d) Fermentation.  
e) Esterification. **1x5**
- Q.6 Explain the preservation by salt and smoking. **5**
- Q.7 Write a short note on fermentation technology. **5**
- Q.8 Discuss the objectives in food irradiation with emphasis on safety and quality of irradiated food. **5**
- Q.9 Describe the heat resistance of microorganisms with emphasis on thermal death curve. **5**
- Q.10 Explain the classification, separation and standardization of milk. **5**
- Q.11 Explain ageing, tenderizing, curing, smoking and freezing of meat. **5**

**End Semester Examination, Dec. 2015**  
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 **SIX** questions from **Part-B**.

**PART-A**

- Q.1 What are the different type of waste product in a food industry? Explain the various measures adopted by food industries to manage the same. **10**
- Q.2 Write a detailed note on various international to private food enforcement and control agencies. **10**
- Q.3 Discuss the various aspects to be considered for the sanitization of a food plant. **10**
- Q.4 Enumerate and discuss the tests used to determine the microbiological quality of water. **10**

**PART-B**

- Q.5 State the various methods used to assess the microbiology of air. **5**
- Q.6 Discuss the bacteriology of any two food groups in short. **5**
- Q.7 Differentiate between the two types of freezing with respect to freezing time. **5**
- Q.8 With the help of suitable flowchart indicate the different types of assays used to assess the microbiology of food. **5**
- Q.9 Write the procedure of presumptive test used in assessing the microbiology of water. **5**
- Q.10 Discuss the role if any three scientists in the development of food microbiology. **5**
- Q.11 Write short notes on **any two**:
- a) Canning.
  - b) Food additives.
  - c) Food fermentation. **5**

# End Semester Examination, Dec. 2015

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 Explain the principles of physical training in detail. **10**
- Q.2 Write the methods of measuring the cardiac output. **10**
- Q.3 Discuss in detail the mechanism of thermoregulation. **10**
- Q.4 Explain the assessment of physical fitness by Harvard and modified Harvard step tests. **10**

### **PART-B**

- Q.5 Write a short note on physical activity, health and longevity. **5**
- Q.6 Explain the concept of lactate threshold and lactate tolerance alongwith its usefulness. **5**
- Q.7 Discuss the concept of overtraining and detraining in games and sports. **5**
- Q.8 Differentiate between fast-twitch and slow-twitch muscle fibers. **5**
- Q.9 What are the four techniques used for physical training. **5**
- Q.10 Explain the concept of endurance, strength and speed in games and sports with suitable examples. **5**
- Q.11 Given: Diastolic blood pressure = 95 mm Hg  
Systolic blood pressure = 230 mm Hg  
Cardiac output = 45.0 L min<sup>-1</sup>  
Calculate MAP and TPR. **5**

**End Semester Examination, Dec. 2015**  
M. Sc. (N & D) - Third Semester  
**SPORTS BIOCHEMISTRY (THEORY) (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 hormonal regulation of exercise. How the hormones secreted from different glands affect exercise and sports performance. **10**
- Q.2 Explain carbohydrate loading in detail and elaborate the different phases involved in it. **10**
- Q.3 Explain fatigue. Discuss central fatigue in detail. **10**
- Q.4 What are different types of physical activity and exercises? Enlist and discuss its advantages also. **10**

**PART-B**

- Q.5 Write short notes on:  
a) Enterohepatic circulation of bile.  
b) Overtraining. **5**
- Q.6 Complete the following sentences:  
a) Mutarotation is \_\_\_\_\_.  
b) Oligosaccharides are \_\_\_\_\_.  
c) Facilitated diffusion \_\_\_\_\_.  
d) Homopolysaccharides yield \_\_\_\_\_.  
e) Glycogen is \_\_\_\_\_. **5**
- Q.7 Define the following:  
a) Thermo regulation.  
b) Fluid replacement beverages.  
c) Sports.  
d) Dehydration.  
e) Proteins. **5**
- Q.8 What are the warning signs of heat illness? What factors increase it? **5**
- Q.9 Explain the role of fat, protein and carbohydrates on sports activity. **5**
- Q.10 List and explain role of micronutrients on sports. **5**
- Q.11 Discuss role of water and electrolyte on sports. **5**



**End Semester Examination, Dec. 2015**  
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 Discuss the pathophysiology and vicious cycle of Bulimia nervosa. **10**
- Q.2 Discuss in detail about the principles and recommendations of weight management in sports. **10**
- Q.3 Discuss the role of nutrition in sports and physical activity. **10**
- Q.4 Discuss the importance of fat soluble vitamins for a sport person. **10**

**PART-B**

Write short notes on:

- Q.5 Principles of exercise prescription. **5**
- Q.6 Weight gain in sports. **5**
- Q.7 Hormonal agents as ergogenic aids. **5**
- Q.8 Disadvantages of ergogenic aids. **5**
- Q.9 Role of vitamin C for a sports person. **5**
- Q.10 Nutritional treatment of anorexia nervosa. **5**
- Q.11 Body building supplements. **5**

**End Semester Examination, Dec. 2015**  
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 | Explain the benefits of eating well.                              | <b>10</b> |
| Q.2 | Explain the principle of seasonal weight management in wrestlers. | <b>10</b> |
| Q.3 | Explain about the Gynecological disorders in sports person.       | <b>10</b> |
| Q.4 | Explain about the history of women in sports.                     | <b>10</b> |

**PART-B**

Write short notes on:

- |      |  |          |
|------|--|----------|
| Q.5  | The right way to fuel in endurance sports.                     | <b>5</b> |
| Q.6  | Importance of hydration for a wrestler.                        | <b>5</b> |
| Q.7  | Nutritional factors that could produce fatigue in team sports. | <b>5</b> |
| Q.8  | Ethics of doping.  | <b>5</b> |
| Q.9  | Physiological characteristics of team sports.                  | <b>5</b> |
| Q.10 | Training diet in racket sports.                                | <b>5</b> |
| Q.11 | Participation of women in Olympics.                            | <b>5</b> |

**End Semester Examination, Dec. 2015**  
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 diet and how we evaluate the athlete's diet? **10**
- Q.2 Discuss the role of ministry of human resource development in promotion of sports and physical education. Explain their importance and contribution. **10**
- Q.3 What are the roles of national sports organizations? Explain any two organizations in detail with promotion and management of sports. **10**
- Q.4 What are the steps of new food product development (NFPD)? Discuss each step in detail. **10**

**PART-B**

- Q.5 Explain the Myths about sports nutrition. **5**
- Q.6 Discuss the role of sports management companies. **5**
- Q.7 Write down role of any one international sports organization. **5**
- Q.8 Write short notes on drug abuse. **5**
- Q.9 Write short notes on brand name and trade mark in new food product development. **5**
- Q.10 Importance of discounts and rebates in NFPD. **5**
- Q.11 Explain the role of sports in society. **5**

**End Semester Examination, Dec. 2015**  
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 in detail. **10**
- Q.2 What is group cohesiveness? Explain the various factors by which cohesiveness is influenced. **10**
- Q.3 Explain in detail different steps taken by the Indian government to promote sports. **10**
- Q.4 Explain natures, scope and importance of marketing. **10**

**PART-B**

- Q.5 Explain characteristics of management. **5**
- Q.6 Write short notes on:  
a) Leadership styles.  
b) Group dynamics. **5**
- Q.7 Briefly explain advantages and limitations of major advertising media. **5**
- Q.8 Explain factors influencing the sport market segment. **5**
- Q.9 Explain various stages in conflict process. **5**
- Q.10 Briefly explain the application of goal setting to organizational performance. **5**
- Q.11 List various techniques associated with goal setting. Explain any one in detail. **5**

**End Semester Examination, Dec. 2015**  
 Master of Physiotherapy - First Semester  
**BIostatistics AND RESEARCH METHODOLOGY (MPb-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 Explain the meaning of analysis of variance. Describe the technique of analysis of variance for one way classification. **10**
- Q.2 In an experiment on immunization of cattle from TB, following results were obtained:

	Affected	Not affected
Inoculated	12	26
Not- inoculated	16	6

Discuss the effect of vaccine in controlling susceptibility to TB. (5% value of chi-square for one degree of freedom=3.84). **10**

- Q.3 What is non-experimental research? Discuss descriptive designs in detail. **10**
- Q.4 Discuss sampling. What are its different types? **10**

**PART-B**

- Q.5 Write the properties of a normal distribution curve. **5**
- Q.6 Calculate Karl Pearson's co-efficient of correlation and comment on its type.

Marks in English	Marks in maths
48	45
35	20
17	40
23	25
47	45

- 5**
- Q.7 Write a short note on types of variables. **5**
- Q.8 Write a short note on scaling. **5**
- Q.9 Calculate standard deviation from the data: 7, 10, 12, 13, 15, 20, 28, 29, 35. **5**
- Q.10 Discuss the ethical principles of confidentiality and privacy. **5**
- Q.11 Discuss graphical representation of data with examples. **5**

Q.12 Differentiate between validity and reliability.

**5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Sports) - Third Semester  
**INTERDISCIPLINARY LEARNING (THEORY) (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 What is performance appraisal? Explain in detail different types of performance appraisals. **10**
- Q.2 Explain in detail with suitable examples elements of patients management with special reference to initial examination and evaluation. **10**
- Q.3 Explain the need and importance of lesson planning with suitable examples. **10**
- Q.4 Define counseling. Explain in detail various principles involved in counseling. **10**

**PART-B**

- Q.5 Briefly explain different types of teaching aids. **5**
- Q.6 What is educational psychology? Explain relationship between teaching and learning. **5**
- Q.7 Explain with suitable examples different agencies of education. **5**
- Q.8 Write short notes on:  
a) Principles of collaboration  
b) Code of ethics **5**
- Q.9 Explain briefly role and responsibilities of:  
a) Audiologist  
b) Prosthetist **5**
- Q.10 Explain the ways of reimbursement in health care services. **5**
- Q.11 Briefly explain the advantages of sentinel event reporting. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**FUNDAMENTALS AND BIOMECHANICS IN MUSCULOSKELETAL**  
**(MPM-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 You are assessing the risk factors of employees in an automobile manufacturing organization and find them suffering from various U/E WRMSO. Discuss the possible factors. What kind of exercises can be prescribed to them? **10**
- Q.2 Describe energy conservation during gait cycle. **10**
- Q.3 Define joint mobilization. Differentiate between Maitland and Kaltenborn schools of mobilization. **10**
- Q.4 Explain the role of TENS in pain management. **10**

**PART-B**

- Q.5 Write short note on types on mechanoreceptors. **5**
- Q.6 Explain the concept of neuroplasticity with its use in rehabilitation. **5**
- Q.7 Write a short note on biomechanical properties of skeletal muscle. **5**
- Q.8 Discuss the hierarchy in manual therapy. **5**
- Q.9 Discuss the various crutch walking gaits. **5**
- Q.10 Explain muscle length testing of biceps brachii. **5**
- Q.11 Explain 1 RM with its calculation. **5**
- Q.12 Differentiate between walking and running. **5**



**End Semester Examination, Dec. 2015**  
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 Explain in detail about the Mackenzie principle of mobilization. Describe in detail about the spinal extension protocol techniques of Mckenzie mobilization. **10**
- Q.2 What is CMT? Explain the importance of CMT. What are the physiological laws of spinal motion? **10**
- Q.3 Explain the basic myofascial release technique. Write in brief about the assessment of trigger point. **10**
- Q.4 Describe PRT in detail? What are the principles of positional release technique? Explain with an example. **10**

**PART-B**

Answer the following questions in brief:

- Q.5 Differentiate between active wheelchair and passive wheelchair. **5**
- Q.6 What is double crush syndrome? **5**
- Q.7 Explain SNAG with leg movement at L<sub>4</sub> level. **5**
- Q.8 Describe active inhibition technique. **5**
- Q.9 Describe cyriax mobilization for lateral epicoalition. **5**
- Q.10 Explain upper crossed syndrome. **5**
- Q.11 Role of abdominal bracing in Pilates. **5**

**End Semester Examination, Dec. 2015**  
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 What do you understand by 'lactate threshold'? Describe in detail the importance of 'lactate threshold' in training. **10**
- Q.2 Describe the biomechanical considerations in strength training with suitable examples. **10**
- Q.3 Explain the effect of exercise on hormonal regulation. **10**
- Q.4 Discuss post exercise recovery with emphasis on EPOC. **10**

**PART-B**

- Q.5 Respiratory response to acute exercise. **5**
- Q.6 Discuss important points to consider while prescribing exercise to diabetic patient. **5**
- Q.7 Explain the principles of exercise prescription in neuromuscular diseases. **5**
- Q.8 Describe the principles of exercise training in geriatrics. **5**
- Q.9 Write a short note on strategies to improve self efficacy in long term home exercise program. **5**
- Q.10 Define obesity according to WHO. Calculate the BMI for a person weighing 80 kg and height 5 feet 10 inches. **5**
- Q.11 What are the effects of exercises in treatment of depression? **5**
- Q.12 Explain the effect of exercise on GIT system. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) - First Semester  
**FUNDAMENTALS AND BIOMECHANICS IN NEUROLOGY**  
**(MPN-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 What do you understand by pain? Explain the most acceptable theory of pain. Highlight the role of TENS in pain management. **10**
- Q.2 What do you understand by postural assessment? What are the various methods of postural assessment? Explain the various postural deviations in lateral plane. **10**
- Q.3 Examine the role of fatigue in relation to workplace mishaps in the light of EBP. **10**
- Q.4 What do you understand by relaxation? What are the various methods of relaxation? Explain any two methods in detail. **10**

**PART-B**

- Q.5 Briefly explain the role of cerebellum in balance maintenance. **5**
- Q.6 Role of augmented feedback in motor learning. **5**
- Q.7 Various transfer techniques for unlevelled transfers. **5**
- Q.8 Explain the therapeutic application of EMG. **5**
- Q.9 What is crutch walking? Briefly explain various types of crutch walking. **5**
- Q.10 Briefly explain the deviations of hemiplegic gait. **5**
- Q.11 Throw light on systems theory of motor control. **5**
- Q.12 Write a short note on saltatory conduction. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) - Third Semester  
**ADVANCED THERAPEUTICS IN NEUROLOGY (MPN-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 various principles of Mota releasing program used for treating a hemiplegic patient. **10**
- Q.2 Explain various principles of NDT. **10**
- Q.3 Explain the effects of buoyancy on human body and its role in rehabilitation. **10**
- Q.4 Explain various facilitatory techniques of Roods approach. **10**

**PART-B**

Answer the following questions in brief:

- Q.5 Describe hold relax techniques of PNF. **5**
- Q.6 Explain role of biofeedback in rehabilitation. **5**
- Q.7 Explain stages of recovery of brainstorm. **5**
- Q.8 Explain principle of irradiation. **5**
- Q.9 Explain upper limb tension testing for a median nerve. **5**
- Q.10 Explain positioning in acute stage of a shock patient. **5**
- Q.11 Explain various inhibitory techniques of Rood's approach. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) - Fourth Semester  
**EXERCISE PHYSIOLOGY AND EXERCISE PRESCRIPTION IN**  
**NEUROLOGUY (MPN-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 in detail the role of exercises on nervous system. **10**
- Q.2 What is anaerobic threshold? Explain the mechanism of lactate increase as related to work rate. **10**
- Q.3 Explain the principles of exercise prescription in the treatment of hypertension. **10**
- Q.4 Explain the effect of aerobic exercises on respiratory system. **10**

**PART-B**

- Q.5 Write short notes on ceiling effect. **5**
- Q.6 Write short note on principle of resistance training. **5**
- Q.7 Write role of exercises in geriatric population. **5**
- Q.8 Give the guidelines of exercise prescription in 60 years old female. **5**
- Q.9 Explain Bruce protocol. **5**
- Q.10 Explain the role of exercises in cerebral palsy along its principles of exercise prescription. **5**
- Q.11 Describe physiological adaptations of endurance exercises. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Sports) - First Semester  
**FUNDAMENTAL AND BIOMECHANICS IN SPORTS (MPS-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 Define Biomechanics. Discuss the uses of Biomechanics in the field of Physiotherapy. **10**
- Q.2 Discuss the Biomechanics of throwing in detail. **10**
- Q.3 Define GAIT. Discuss in detail about the determinants of GAIT. **10**
- Q.4 Enumerate the various factors affecting the stability of a human body. **10**

**PART-B**

- Q.5 Discuss the Biomechanical properties of skeletal muscles. **5**
- Q.6 Give classification of levers with help of the examples from human body. **5**
- Q.7 Write short note on repetitive stress injury. **5**
- Q.8 Differentiate between slow and fast twitch fibres. **5**
- Q.9 Explain the role of proprioceptive training in rehabilitation. **5**
- Q.10 Discuss carrying angle and significance of it. **5**
- Q.11 Write in short about the WRMSD's. **5**

**End Semester Examination, Dec. 2015**  
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 What is somatotyping? Explain the Sheldon's method of somatotyping. Write a note on importance of somatotyping on sports performance. **10**
- Q.2 Discuss the offensive and defensive techniques of Basketball. **10**
- Q.3 Explain the principles of muscle energy technique in detail. **10**
- Q.4 Write the importance of fore-platform evaluation in sports rehabilitation. **10**

**PART-B**

- Q.5 Write the advantages of isokinetic evaluation in sports. **5**
- Q.6 Explain the Bioelectrical Impedance Analysis (B.I.A.) uses, advantages and disadvantages in brief. **5**
- Q.7 Explain the role of positional release therapy in sports. **5**
- Q.8 Explain the defensive technique of football. **5**
- Q.9 Enumerate the various methods of body composition and write a short note on hydrostatic weighing. **5**
- Q.10 Write the role of treadmill in sports training. **5**
- Q.11 Write the importance for skin fold measurement in calculating body fat. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Sports) – Fourth 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 What is lactate threshold. Explain the importance of term in relation to performance. **10**
- Q.2 Explain the importance of ATP—Pcr system on performance. **10**
- Q.3 Explain the regulation of circulation during exercise. **10**
- Q.4 Discuss the advantage and disadvantages of carbohydrate loading. **10**

**PART-B**

- Q.5 Explain the fluid recommendations during exercise. **5**
- Q.6 Discuss the teem runner's high. **5**
- Q.7 Write the principles of exercise testing. **5**
- Q.8 Discuss various determinant of strength training protocol. **5**
- Q.9 Write the principle of exercise prescription for a diabetic athlete. **5**
- Q.10 Explain the blood pressure response to exercise. **5**
- Q.11 Explain the hormonal regulation of fluids and electrolyte during exercise. **5**



**End Semester Examination, Dec. 2015**  
Master of Physiotherapy - First Semester  
**BUSINESS DEVELOPMENT IN HEALTH CARE (MPT-001)**

Time: 3 hrs

Max Marks: **50**

No. of pages: **1**

Note: **Q.1 is compulsory.** Attempt any **TWO** long questions from **Part-A** and **FOUR** short questions from **Part-B.**

- Q.1 Define the following questions:  
a) Health care work force.  
b) Incidence.  
c) Prevalence.  
d) Mortality.  
e) Physical therapy. **2x5**

**PART-A**

- Q.2 What is quality assurance? Explain in detail. **10**
- Q.3 Explain in detail the different levels of care in health care delivery system. **10**
- Q.4 Discuss the physiotherapy as a model for business. **10**

**PART-B**

- Q.5 What are challenges of health care improvement in India? **5**
- Q.6 Define health and its determinants. **5**
- Q.7 What is accreditation and explain its significance? **5**
- Q.8 Discuss holistic model of health care in brief. **5**
- Q.9 What is Tele medicine? Explain. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**ADVANCED BASIC MEDICAL SCIENCE IN MUSCULOSKELETAL**  
**(MPTM-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) Main branches of lumbar plexus.
- b) Trapezius upper fiber-origin and insertion.
- c) Apparent limb length measurement.
- d) MUAP.
- e) Types of nerve injury.
- f) Klumpky's palsy.
- g) Carrying angle.
- h) Mechanoreceptors.
- i) Content of cubital fossa.
- j) Sacco mere

**2x10**

**PART-A**

Q.2 Define osteomyelitis. What is the pathophysiology and clinical sign symptoms of the disease? **20**

Q.3 Explain in detail about the metabolic disease of bone. What is the role of nutrition in bone disease? **20**

Q.4 What are degenerative joint disease? Explain osteoarthritis in detail along with its pathophysiology. **20**

**PART-B**

Q.5 Explain core muscle. What is the importance of core muscle in lumbar stabilization? Explain also the muscles of lumbar spine which help stabilizing it. **20**

Q.6 Explain the following:

- a) Lumbopelvic rhythm.
- b) Scapulothoracic rhythm.

**20**

Q.7 Explain the muscle contraction phenomenon. Draw diagram of sarcomere. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy – First Semester  
**KINESIOLOGY AND BIOMECHANICS (MPTM-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 Define/Explain the following in brief:

- a) Ulnar positive and negative variance.
- b) Costotransverse joint.
- c) Ligaments of shoulder complex.
- d) Line of gravity.
- e) Lever of power.
- f) Force.
- g) Law of inertia.
- h) Law of reaction.
- i) Triangular fibro-cartilage complex.
- j) Ergonomics.

**2x10**

**PART-A**

Q.2 Define GAIT. Discuss in detail about the determinants of GAIT. **20**

Q.3 Describe the kinetics and kinematics of cervical region. **20**

Q.4 Discuss sagittal and frontal plane analysis of joint reaction force at hip joint in stable equilibrium position. **20**

**PART-B**

Q.5 Explain stress-strain curve of tendons. Describe the effects of physical conditions and biological factors on mechanical properties of tendons and ligaments. **20**

Q.6 Describe scapula-humeral rhythm and its importance. What do you understand by screw home mechanism and name the muscles for locking and unlocking the joint. **20**

Q.7 Differentiate between running and walking GAIT. Explain in detail arm swing movement, trunk and foot mechanics in running. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**PHYSIOTHERAPEUTICS - I (MPTM-104)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1 is compulsory.** Marks are indicated against each question.

- Q.1 a) What is mobilization?  
b) Explain convex-concave rule.  
c) Explain manual muscle testing for Latismus Dorsi.  
d) Explain goniometry for proration and supination of forearm.  
e) What is Ballistic stretching?  
f) What all deformities can occur at knee due to faulty postures?  
g) Explain D<sub>1</sub> flexion and its indications.  
h) Explain lower cross syndrome.  
i) What are indications for low frequency currents?  
j) Explain Lewis hunting reaction.

**2x10**

**PART-A**

- Q.2 Define Pain. Explain its different theories and its modulation. **15**
- Q.3 What is re-education and strengthening? Explain in detail various therapeutic exercises test to achieve it. **15**
- Q.4 Define neuro muscular control and factors affecting it. Also explain what techniques can be used if there is impairment in neuro muscular control. **15**
- Q.5 Explain in detail about short wave diathermy and also discuss its recent advances. **15**

**PART-B**

Write short notes on:

- Q.5 What is laser? **5**
- Q.6 Explain the uses of biofeed back. **5**
- Q.7 What are relaxation techniques, explain in brief with examples? **5**
- Q.8 Give indications and precautions for stretching. **5**
- Q.9 Role of physical therapy in healthy people. **5**
- Q.10 Explain in brief the physiological effects of ultra sound and its indications. **5**
- Q.11 What is ideal posture and explain its imbalances. **5**
- Q.12 What are medium frequency currents? **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy - First Semester  
**RESEARCH METHODOLOGY AND BIOSTATISTICS**  
**(MPTM/MPTN/MPTS/MPTC-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
- Define research designs.
  - Methods of collecting qualitative data.
  - Primary and secondary data.
  - Methods of data representation.
  - Define median.
  - Define positive co-relation.
  - Open and closed questionnaire.
  - Define confounding variables.
  - Difference between samples and population.
  - Mention two measures of variability in distribution. **2x10**

**PART-A**

- Q.2 Compare and contrast between qualitative and quantitative research designs. Add a note on their advantages and disadvantages. **20**

- Q.3 In an experiment on immunization of cattle from TB, following results were obtained:

	Affected	Not Affected
Inoculated	12	26
Not Inoculated	16	6

Interpret the result in terms of efficacy of vaccine in controlling success-ability to TB. (chi-square value for 1DOF at 5%=3.84) **20**

- Q.4 Calculate mean, median and mode of the following data:

Marks Range	No. of Students
0-5	7
5-10	10
10-15	16
15-20	30
20-25	24
25-30	17
30-35	10
35-40	5
40-45	1

Also comment on the type of distribution. **20**

**PART-B**

- Q.5 Describe scaling. Discuss the steps involved in scaling. Describe the properties of measurement scales. **20**

- Q.6 Define hypothesis. What are the different types of hypothesis? Describe the characteristics of a hypothesis. Also explain the significance of a P-value. **20**

Q.7 Describe the various ethical principles to be followed in clinical research. Describe informed consent in detail. Also explain such situations where informed consent cannot be obtained. Also suggest remedial measures for it. **20**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Musculoskeletal) - First Semester  
**RESEARCH METHODOLOGY AND BIOSTATISTICS**  
**(MPTM/MPTN/MPTS/MPT/C-102)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 2

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1 is compulsory**. Marks are indicated against each question.

Q.1 Very short answers:

- a) Define research design.
- b) Methods of collecting qualitative data.
- c) Primary and secondary data.
- d) Methods of data representation.
- e) Define median.
- f) Define positive co-relation.
- g) Open and closed questionnaire.
- h) Define confounding variables.
- i) Difference between samples population.
- j) Mention two measures of variability in a distribution.

**2x10**

**PART-A**

Q.2 Compare and contrast qualitative and quantitative research designs.

**15**

Q.3 In an experiment on immunization of cattle from TB, following results were obtained.

	Affected	Not Affected
Inoculated	12	26
Not inoculated	16	6

Discuss the effect of vaccine in controlling susceptibility to TB.  
(Chi-square value for one DOF at 5%=3.84).

**15**

Q.4 From the following data calculate mean, median and mode.

Marks	No. of students
0-5	7
5-10	10
10-15	16
15-20	30
20-25	24
25-30	17
30-35	10
35-40	5
40-45	1

**15**

Q.5 Describe critical analysis of a report.

**15**

**PART-B**

- |      |   |          |
|------|---|----------|
| Q.6  | Describe measurement scales.  | <b>5</b> |
| Q.7  | Explain possible sources of error in measurement.   | <b>5</b> |
| Q.8  | Write a short note on scaling.  | <b>5</b> |
| Q.9  | Explain situations when informed consent cannot be obtained.                              | <b>5</b> |
| Q.10 | Describe the characteristics of a hypothesis.   | <b>5</b> |
| Q.11 | Describe the types of reliability.  | <b>5</b> |
| Q.12 | Explain the significance of P-Value.  | <b>5</b> |
| Q.13 | What happens when the data in a distribution is concentrated on either side of the curve? | <b>5</b> |



**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) - First Semester  
**ADVANCED BASIC MEDICAL SCIENCE IN NEUROLOGY (MPTN-101)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1** is **compulsory**. Marks are indicated against each question.

- Q.1 Answer briefly:
- a) Classification of nervous system.
  - b) Nuclear of first four cranial nerves.
  - c) Function of Meninges.
  - d) Cardinal sign of inflammation.
  - e) Drugs used in pain.
  - f) Formation of peripheral nerve.
  - g) Classification of muscles.
  - h) Muscles supplied by ulnar nerve.
  - i) Signs and symptoms of Meningitis.
  - j) Nerves emerging from lumbar plexuses. **2x10**

**PART-A**

- Q.2 What is a joint? What are the various joint classifications? Describe in detail any one joint classification. **15**
- Q.3 Explain the organization and function of autonomic nervous system. **15**
- Q.4 What do you understand by tone? Explain the regulation of tone. **15**
- Q.5 Describe the blood circulation of the central nervous system. Also add a note on the conditions arising due to cessation of vascular supply to brain. **15**

**PART-B**

Write short notes on:

- Q.6 CSF- formation and circulation. **5**
- Q.7 Properties of nerve fibres. **5**
- Q.8 V<sup>th</sup> and VIII<sup>th</sup> cranial nerves. **5**
- Q.9 Brachial plexuses. **5**
- Q.10 Briefly explain popliteal fossa and its contents. **5**
- Q.11 Briefly describe the pathophysiology of Parkinsonism. **5**
- Q.12 Comment upon the drugs acting upon brain and spinal cord. **5**
- Q.13 Briefly explain the fate of neurons in intracranial haemorrhage. **5**

# End Semester Examination, Dec. 2015

Master of Physiotherapy (Neurology) – First Semester

## ADVANCED BASIC MEDICAL SCIENCE IN NEUROLOGY (MPTN-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 Answer Briefly:

- a) Classification of Nervous system.
- b) Function of meninges.
- c) Cardinal sign of inflammation.
- d) Drugs used in pain.
- e) Differentiate between necrosis and gangrene.
- f) Classification of muscles.
- g) Muscles supplied by ulnar nerve.
- h) Signs and symptoms of meningitis.
- i) Formation of nerves of lumbar plexus.
- j) Features of diabetic neuropathy.

**2x10**

### **PART-A**

- Q.2 a) What is a joint? What are the various classifications of joints? Explain any one classification in detail. **15**
- b) Write a short note on "synovial joint". **5**
- Q.3 a) Explain blood circulation of central nervous system in detail. **10**
- b) Explain formation, circulation and absorption of CSF. Also add a note on lumbar puncture. **10**
- Q.4 a) What is muscle tone? Explain the various mechanisms underlying the maintenance of muscle tone. **10**
- b) Explain various tests for the assessment of muscle tone. **10**

### **PART-B**

- Q.5 a) Explain the formation of a typical peripheral nerve. Highlight various properties of peripheral nerves. **10**
- b) Classification of nerve fibres. **5**
- c) Write a note saltatory conduction. **5**
- Q.6 a) What is Parkinsonism? Explain the pathophysiology of Parkinsonism and its various etiological factors in detail. **10**
- b) Explain anti-Parkinsonion drugs. Add a note on their mode of actions. **10**
- Q.7 a) Enumerate the cranial nerves along with their nuclei in CNS. **5**
- b) Assessment of V<sup>th</sup> cranial nerve. **5**
- c) Assessment of VIII<sup>th</sup> cranial nerve. **5**
- d) Lesions of VII<sup>th</sup> cranial nerve. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) - First Semester  
**KINESIOLOGY AND BIOMECHANICS (MPTN-103)**

Time: 3 hrs

Max Marks: **100**

No. of pages: 1

Note: Attempt any **THREE** questions from **Part-A** and **SEVEN** questions from **Part-B**.  
**Q.1 is compulsory.** Marks are indicated against each question.

- Q.1 Very short notes:
- a) Newton's first law of motion.
  - b) Centre of gravity.
  - c) Types of skeletal muscle fibre.
  - d) Mechanical advantage.
  - e) Structure of ligament.
  - f) Lifting equation.
  - g) Phases of gait cycle.
  - h) What is arthrokinematics?
  - i) Physical risk factors for WRMSD's.
  - j) Generalized motor program.

**2x10**

**PART-A**

- Q.2 Describe the kinetic and kinematics of cervical segments. **15**
- Q.3 What do you understand by motor control? What are the various theories of motor control? Explain any two theories in detail. Which theory is most accepted and why? **15**
- Q.4 Explain the type of lubrication present in the synovial fluid of joints. Write in brief about hydrostatic lubrication. **15**
- Q.5 Describe the role of trunk movement, arm swing- and foot mechanics during running. **15**

**PART-B**

Write short notes on:

- Q.6 Explain the equation of joint reaction force with example. **5**
- Q.7 Describe the various determinants of gait. **5**
- Q.8 What is lever? Give classification of levers with examples from human body. **5**
- Q.9 Explain the various factors affecting stability. **5**
- Q.10 Briefly comment upon the changes in the mechanical properties of skeletal muscles with ageing. **5**
- Q.11 Briefly explain the factors affecting the motor learning. **5**

- Q.12 Briefly explain the biomechanical risk factors for WRSMD'S. **5**
- Q.13 Give the classification of joints on the basis of function. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy (Neurology) – First Semester  
**KINESIOLOGY AND BIOMECHANICS (MPTN-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 Define/Answer the following questions in brief:

- a) Newton's first law of motion.
- b) Centre of gravity.
- c) Types of skeletal muscle fibres.
- d) Mechanical advantage.
- e) Structure of ligament.
- f) Lifting equation.
- g) Phases of gait cycle.
- h) What is arthro kinematics?
- i) Physical risks for WRMSD's.
- j) Generalised motor program.

**2x10**

**PART-A**

- Q.2 a) Describe Kinetic and Kinematics of cervical segment. **15**  
b) Explain joint reaction force at C<sub>1</sub> and C<sub>7</sub> segment. **5**
- Q.3 a) What do you understand by motor control? Explain any two theories of motor control along with its limitation and clinical implication. **10**  
b) Describe various factors affecting motor learning in detail. **10**
- Q.4 a) Describe various determinants of gait. **10**  
b) Describe the role of trunk movement, arm swing and foot mechanics during running. **10**

**PART-B**

- Q.5 a) Explain the type of lubrication present in the synovial fluid of joints. Briefly explain hydrostatic lubrication. **15**  
b) Explain the equation of joint reaction force with examples. **5**
- Q.6 a) Explain various mechanical properties of skeletal muscles. **5**  
b) Comment upon the changes in properties of skeletal muscles with ageing. **5**  
c) Describe the length tension relationship. Highlight its clinical application with appropriate examples. **10**
- Q.7 a) What are WRSMD's? Explain various musculoskeletal WRSMD's. **10**  
b) Explain various biomechanical risk factors for WRSMD's. **5**  
c) Explain various preventive measures to avoid WRSMD's. **5**

**End Semester Examination, Dec. 2015**  
Master of Physiotherapy - First Semester  
**FOREIGN LANGUAGE (GERMAN) (PT-GE-02)**

Time: 3 hrs

Max Marks: **50**

No. of pages: **1**

Note: *Attempt to **all questions are compulsory.***

Q.1 Translate the following in English.

- a) Ich bin Maler von Beruf.
- b) Er kommt aus Frankreich.
- c) Sie wohnt in Deutschland.
- d) Ich bin Herr Schiller.
- e) Ich möchte Saft trinken.

**2x5**

Q.2 Translate the following:

- a) Where does he live?
- b) My name is Petera Walter.
- c) My hobbies are travelling, listening to music and playing chess.
- d) The twenty fourth of September is a Thursday.
- e) The STD code of Faridabad is 0129.
- f) When is New Year?
- g) My birthday is on 25<sup>th</sup> November.
- h) Day before yesterday was 3<sup>rd</sup> November, 2015.
- i) My brother studies in Manav Rachna University.
- j) I would like to play badminton.

**2x10**

Q.3 Make questions example:

Was ist das?

Das ist **ein Tisch.**

a) \_\_\_\_\_ ?

Meine Handynummer ist **9811345761.**

b) \_\_\_\_\_ ?

Ich spiele **Karten.**

c) \_\_\_\_\_ ?

Sie heißt **Marina.**

d) \_\_\_\_\_ ?

Ich lerne **Deutsch.**

e) \_\_\_\_\_ ?

Weihnachten ist **am 25. Dezember.**

**2x5**

Q.4 Fill in the blanks:

- a) Eva \_\_\_\_\_ Psychologie. (studieren)
- b) Jetzt \_\_\_\_\_ wir Kaffee. (trinken)
- c) Die Gäste \_\_\_\_\_ Musik. (hören)
- d) Das \_\_\_\_\_ Angela und Roberto. (sein)
- e) Stefanie \_\_\_\_\_ ein Buch. (lesen)

**2x5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - First Semester  
**ANATOMY-I (PT-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 Explain in detail shoulder joint with special emphasis on abduction with a labeled diagram **10**
- Q.2 Describe brachial plexus with a labeled diagram and clinical anatomy. **10**
- Q.3 Describe bronchopulmonary segments of lungs with their importance and clinical anatomy with labeled diagrams. **10**
- Q.4 Classify joints and give a suitable example of each. **10**

**PART-B**

Write short notes on **any six** of the following:

- Q.5 Cubital fossa. **5**
- Q.6 Arches of foot. **5**
- Q.7 Typical rib and intercostal spaces. **5**
- Q.8 Inguinal canal and hernia. **5**
- Q.9 Classification of epiphysis. **5**
- Q.10 Venous drainage of lower limb. **5**
- Q.11 Quadriceps femoris. **5**
- Q.12 Lymphatic drainage of mammary gland. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**PHYSIOLOGY-I (PT-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 Describe various processes by which substances are transported across cell membrane. **10**
- Q.2 Explain composition and functions of blood. **10**
- Q.3 Describe structure of synapse and mechanism of synaptic transmission. **10**
- Q.4 Define cardiac output. Give its normal value. Describe the controls of cardiac output. **10**

**PART-B**

- Q.5 Describe functions of liver. **5**
- Q.6 Discuss RMP and its genesis. **5**
- Q.7 Describe functions of stomach. **5**
- Q.8 Define anaemia. Write its grading. Classify anaemia on the basis of their causes. **5**
- Q.9 Describe intrinsic mechanism of blood coagulation. **5**
- Q.10 Discuss Rh-blood group and its significance. **5**
- Q.11 Explain conduction of action potential in myelinated and non-myelinated nerves. **5**
- Q.12 Write a note on dietary fibres and their significance. **5**



**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**BIOCHEMISTRY (PT-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 the different types of enzyme inhibition? Explain with suitable graphs. **10**
- Q.2 Describe the chemistry and functions of various plasma proteins. Add a note on the separation of plasma proteins. **10**
- Q.3 Describe sources, biochemical functions, requirement and deficiency manifestations of vitamin 'D'. **10**
- Q.4 What is the normal pH of blood? Explain the role of plasma buffers and renal mechanisms in the maintenance of acid base balance of the body. **10**

**PART-B**

- Q.5 Explain the biochemical functions of calcium in the body. **5**
- Q.6 Classify lipoproteins giving their biological significance. **5**
- Q.7 What is diabetes mellitus? Discuss metabolic dearrangement in DM. **5**
- Q.8 Explain the significance of HMP shunt pathway. **5**
- Q.9 Enumerate liver function tests. **5**
- Q.10 Write importance of Van der Bergh test. **5**
- Q.11 Enumerate kidney function tests. **5**
- Q.12 Differentiate between reducing and non-reducing sugars giving importance of Benedict's test. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**FUNDAMENTALS OF PHYSIOTHERAPY (PT-104)**

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 is equilibrium? Give types of equilibrium and factors affecting equilibrium. **10**
- Q.2 Define levers. Give examples of levers in daily life and in human body. **10**
- Q.3 What is joints? Classify different joint with diagrams and examples. **10**
- Q.4 Write in detail about classification of movement with proper diagrams. Also mention planes and axis in which they occur. **10**

**PART-B**

- Q.5 Briefly describe type of muscle contractions. **5**
- Q.6 Describe about different muscle group actions. **5**
- Q.7 Define electromagnetic spectrum. **5**
- Q.8 Describe resistance in series. **5**
- Q.9 Define pulleys and give its classification. **5**
- Q.10 What is electric shock and its management. **5**
- Q.11 Describe circuit diagram of microwave diathermy. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – First Semester  
**SOCIOLOGY (PT-105)**

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 relationship of sociology with other sciences.            | <b>10</b> |
| Q.2 | What are various methods of studying sociology?                       | <b>10</b> |
| Q.3 | What is work in social context? Discuss the various theories of work. | <b>10</b> |
| Q.4 | Elaborate on existing caste system in India.                          | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | What is the importance of studying sociology to health care professionals? | <b>5</b> |
| Q.6  | Write a short note on ALCOHOLISM.  | <b>5</b> |
| Q.7  | What is family? Discuss its types.   | <b>5</b> |
| Q.8  | Write a short note on socialization.                                       | <b>5</b> |
| Q.9  | List the causes and social impact of juvenile delinquency.                 | <b>5</b> |
| Q.10 | "Problems of unemployment are threat to society", Comment.                 | <b>5</b> |
| Q.11 | Comment on steps taken by Government to provide social security in India.  | <b>5</b> |
| Q.12 | How culture and health are related to each other?                          | <b>5</b> |

# End Semester Examination, Dec. 2015

Bachelor of Physiotherapy - Second Semester

## ANATOMY-II (PT-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 Describe the anatomy of urinary bladder under following headings:  
a) Parts, surfaces, borders and relations. **5x2**  
b) Nerve supply.
- Q.2 Describe in brief:  
a) Vertebral artery. **5x2**  
b) Coronary sinus.
- Q.3 Describe white matter of cerebrum. **10**
- Q.4 a) Enumerate tracts passing through internal capsule. **5**  
b) Write a short note on klieinfelter's syndrome . **5**

### **PART-B**

- Q.5 Write short notes on:  
a) Urogenital Diaphragm. **3**  
b) Anatomy of middle ear. **2**
- Q.6 Describe effect of lesions of optic nerve in short. **5**
- Q.7 Describe nasal cavity in short with a suitable diagram. **5**
- Q.8 Enumerate:  
a) Branches of mandibular nerve. **3**  
b) Nerve supply of extraocular muscles of eye. **2**
- Q.9 Write short notes on:  
a) Torticollis. **3**  
b) Trachea. **2**
- Q.10 Write short notes on:  
a) Dural venous sinuses. **3**  
b) Fourth ventricle. **2**
- Q.11 Write short notes on:  
a) Facial nerve palsy. **3**  
b) Horner's syndrome. **2**
- Q.12 Describe ascending tracts of spinal cord (with suitable diagrams) with clinical tests done to test them. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Second Semester  
**PHYSIOLOGY-II (PT-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 Name ascending tracts in spinal cord. Trace the pathway for touch sensation. **10**
- Q.2 Explain how CO<sub>2</sub> is transported in the body. **10**
- Q.3 Enumerate the hormones secreted by pancreas. Describe the actions of insulin. Add a note on diabetes mellitus. **10**
- Q.4 Describe various methods of contraception in males and females. **10**

**PART-B**

- Q.5 What are the functions of basal ganglia. Write a note on Parkinson's disease. **5**
- Q.6 Describe origin, pathway and functions of pyramidal tract. **5**
- Q.7 Write a note on surfactant. Describe hyaline membrane disease. **5**
- Q.8 With the help of a diagram describe myopia and its correction. **5**
- Q.9 Describe Juxtaglomerular apparatus and its functions. **5**
- Q.10 Discuss various hormones secreted by placenta. **5**
- Q.11 Explain conduction in myelinated and unmyelinated neurons. **5**
- Q.12 Describe structure of a sperm. Write about the composition of seminal fluid. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Second Semester  
**ELECTROTHERAPY-I (PT-203)**

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 types of TENS in detail.  | <b>10</b> |
| Q.2 | Explain indications, contraindications of faradic type current in detail. | <b>10</b> |
| Q.3 | Explain in detail physiology of nerve membrane potential.                 | <b>10</b> |
| Q.4 | Define iontophoresis with its indications and contraindications.          | <b>10</b> |

**PART-B**

- |      |  |          |
|------|--|----------|
| Q.5  | Explain the role of electromyography.          | <b>5</b> |
| Q.6  | Explain briefly diadynamic current.            | <b>5</b> |
| Q.7  | Write a note on pain gate theory.              | <b>5</b> |
| Q.8  | Write briefly various types of nerve injuries. | <b>5</b> |
| Q.9  | Write a note on SD curve.                      | <b>5</b> |
| Q.10 | Write indications of medium frequency current. | <b>5</b> |
| Q.11 | Define surging along its types.                | <b>5</b> |

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Second Semester  
**EXERCISE THERAPY-I (PT-204)**

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 and classify passive movement. Explain the principles of passive movement. **10**
- Q.2 Discuss the goal, precautions and determinants of stretching exercises. **10**
- Q.3 What is PRE? Explain the DAPRE technique in detail. **10**
- Q.4 Discuss the principles of manual muscle testing. **10**

**PART-B**

- Q.5 Explain the indication, contraindication and technique of application of Continuous Passive Movement (CPM). **5**
- Q.6 Differentiate between active and passive insufficiency with suitable examples. **5**
- Q.7 Explain the types of Goniometer. **5**
- Q.8 Explain the fundamental position of sitting. **5**
- Q.9 Explain the passive stretching of Pectoralis major. **5**
- Q.10 Write the indication for a joint mobilization. **5**
- Q.11 Discuss the importance of free exercise. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Third Semester  
**PHARMACOLOGY (PT-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 is pharmacology? Define drug. What is disease? Mention in detail etiological factor of disease. **10**
- Q.2 Mention the classification of receptors and explain mechanism of action of drug. **10**
- Q.3 What are the cholinergic drugs? Explain in detail the synthesis, storage and depletion of acetylcholine. What are the receptors of acetylcholine? **10**
- Q.4 Write the classification of antihypertensive drug. **10**

**PART-B**

Write short notes on **any six** of the following:

- Q.5 Bioavailability of drug. **5**
- Q.6 Third generation of beta blockers. **5**
- Q.7 Paracetamol. **5**
- Q.8 Action of nitrates. **5**
- Q.9 Enzyme inhibitors. **5**
- Q.10 Adverse drug effect. **5**
- Q.11 Pharmacokinetics and pharmacodynamics. **5**
- Q.12 Local anesthetics. **5**



**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Third Semester  
**PATHOLOGY AND MICROBIOLOGY (PT-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 Define pathology. Classify the branches of pathology. What is environmental pathology? **10**
- Q.2 Define inflammation. Explain in detail the vascular changes and cellular response in acute inflammation. **10**
- Q.3 Define cell. Explain the cell repair by connective tissue. **10**
- Q.4 Describe in detail the laboratory diagnosis of enteric fever. **10**

**PART-B**

Write short notes on **any six** of the following:

- Q.5 Cytoplasm. **5**
- Q.6 Mitochondria. **5**
- Q.7 Oedema. **5**
- Q.8 Wound Healing. **5**
- Q.9 Chemical mediators of inflammation. **5**
- Q.10 Immunity. **5**
- Q.11 Type-I hypersensitivity bacterial. **5**
- Q.12 Growth curve. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Third Semester  
**ELECTROTHERAPY-II (PT-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 is combination therapy. Give examples, principles and benefits of it. **10**
- Q.2 Write in detail about methods of application of an ultrasound. Also describe its thermal and non thermal effects on tissues. **10**
- Q.3 Explain the physiological effects of superficial heating agents. Add a note on contrast bath. **10**
- Q.4 Explain production of short wave diathermy with a circuit diagram. Also explain differential heating of tissues with its application. **10**

**PART-B**

- Q.5 Give indication for infrared radiation. **5**
- Q.6 Short a note on stable and unstable cavitation. **5**
- Q.7 What is phonophoresis? **5**
- Q.8 Explain generation of non-luminous generators. **5**
- Q.9 Explain the principle of production of ultrasound. **5**
- Q.10 What is biofeedback? Give its principle and uses. **5**
- Q.11 Explain dip and wrap technique of paraffin wax bath. **5**
- Q.12 Explain the production and principle of laser. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Third Semester  
**EXERCISE THERAPY-II (PT-304)**

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 various types of crutches along its measurement.        | <b>10</b> |
| Q.2 | Explain various determinants of gait.                           | <b>10</b> |
| Q.3 | Explain various types of incoordination with its management.    | <b>10</b> |
| Q.4 | Explain kyphosis lordosis posture and its management in detail. | <b>10</b> |

**PART-B**

- |      |   |          |
|------|---|----------|
| Q.5  | Explain various bed rest complications.         | <b>5</b> |
| Q.6  | Discuss various breathing exercises.            | <b>5</b> |
| Q.7  | Discuss aerobic exercises.                      | <b>5</b> |
| Q.8  | Explain hemiplegic gait.                        | <b>5</b> |
| Q.9  | Explain various types of suspension.            | <b>5</b> |
| Q.10 | Discuss various techniques of relaxation.       | <b>5</b> |
| Q.11 | Explain patterns of PNF.                        | <b>5</b> |
| Q.12 | Explain step length and stride length in brief. | <b>5</b> |

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Fourth Semester  
**MEDICINE (PT-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 What is anemia? Explain different types of anemia. Describe the causes and treatment of iron deficiency anemia. **10**
- Q.2 Explain in detail chronic renal failure. Mention plan of treatment in chronic renal failure. **10**
- Q.3 What is bronchial asthma? Mention the etiology, risk factor, investigation and management of bronchial asthma. **10**
- Q.4 What are infection diseases? Classification and types of infection diseases. What investigation we will do to rule out infections diseases? **10**

**PART-B**

Write short notes on the following:

- Q.5 Peptic ulcer. **5**
- Q.6 Arterial blood gases analysis. **5**
- Q.7 Jaundice. **5**
- Q.8 Immune-compromised patients. **5**
- Q.9 Treatment of typhoid fever. **5**
- Q.10 Electrolyte imbalance. **5**
- Q.11 Cirrhosis of liver. **5**
- Q.12 Acute respiratory distress syndrome (ARDS). **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Fourth Semester  
**SURGERY INCLUDING GYNAECOLOGY AND OBSTETRICS (PT-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 What is hernia? Define inguinal hernia and all operative procedures of inguinal hernia. **10**
- Q.2 What is normal labour? Describe all stages of normal labour in detail. **10**
- Q.3 Mention the complications of labour and pregnancy in detail. **10**
- Q.4 Discuss burns, causes and management of burns. **10**

**PART-B**

Write short notes on the following:

- Q.5 Physiological changes during pregnancy. **5**
- Q.6 Wounds and its types. **5**
- Q.7 Carbuncle. **5**
- Q.8 Calculation of expected date of delivery (EDD). **5**
- Q.9 Abortion. **5**
- Q.10 Cholecystectomy. **5**
- Q.11 Surgical post operative complications. **5**
- Q.12 Ulcers. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Fourth Semester  
**BIOMECHANICS (PT-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 Discuss in detail about the biomechanics of shoulder joint. Write a note on scapula-Humeral Rhythm. **10**
- Q.2 Explain the effects of injury, immobilization, disease and overuse on connective tissue. **10**
- Q.3 Define biomechanics. How is biomechanics helpful in prevention and rehabilitation of any injury? **10**
- Q.4 Explain the extensor mechanism of hand and write about extrinsic finger extensors. **10**

**PART-B**

- Q.5 Define equilibrium. Give classification of it with examples. **5**
- Q.6 Explain the load deformation curve. **5**
- Q.7 Define lever. Write a note on mechanical advantage of levers. **5**
- Q.8 Differentiate between Isometric and Isotonic type of muscle contraction. **5**
- Q.9 Explain in detail the viscoelastic property of connective tissue. **5**
- Q.10 Differentiate between of type I and type II fibers of skeletal muscles. **5**
- Q.11 Write short notes on:  
a) Carrying angle.  
b) Functions of skeletal muscles. **2<sup>1</sup>/<sub>2</sub>x2**
- Q.12 Write short notes on;  
a) Anatomical pulley.  
b) Motion. **2<sup>1</sup>/<sub>2</sub>x2**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Fourth Semester  
**PSYCHOLOGY AND PSYCHIATRY (PT-404)**

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 theories of attribution with a suitable example of each. **10**
- Q.2 Write in detail about experimental method of psychology. **10**
- Q.3 Explain in detail the mental health examination. Discuss the role of history taking in psychiatric patients along with the treatment plan. **10**
- Q.4 What is creative thinking? Describe nature/types of creative thinking and the stages involved in creative thinking. **10**

**PART-B**

- Q.5 Explain physiology of emotion. **5**
- Q.6 Explain with an example the concept of imitation, social conformity and obedience in social influence. **5**
- Q.7 Write about consistency theories of attitude. **5**
- Q.8 Explain schizophrenia. **5**
- Q.9 Discuss about alcohol and substance misuse. **5**
- Q.10 Write a short note on: "Elated mood/euphoria". **5**
- Q.11 Add a note on: "Somatisation disorders". **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Fourth Semester  
**ADMINISTRATION AND ETHICS (PT-405)**

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 budget and its types in detail.                            | <b>10</b> |
| Q.2 | What are methods of ensuring quality assurance and quality review? | <b>10</b> |
| Q.3 | Write the importance and attributes of time management in detail.  | <b>10</b> |
| Q.4 | Explain the importance of documentation for medical professionals. | <b>10</b> |

**PART-B**

- |      |   |          |
|------|---|----------|
| Q.5  | Which is the best method of performance appraisal according to you and why?   | <b>5</b> |
| Q.6  | Mention the methods of maintaining an inventory in physiotherapy department.  | <b>5</b> |
| Q.7  | What is accreditation? Discuss the agencies of it in physiotherapy.           | <b>5</b> |
| Q.8  | What principles should a physiotherapist follow? Enlist them.                 | <b>5</b> |
| Q.9  | What is SWOT analysis?  | <b>5</b> |
| Q.10 | Elaborate on various types of teaching aids.                                  | <b>5</b> |
| Q.11 | Write a short note on medical insurance in context to physiotherapy in India. | <b>5</b> |



**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Fifth Semester  
**ORTHOPEDICS (PT-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 Explain a fracture. Mention classification of fractures in detail. Explain conservative measures adopted while treating the fractures. **10**
- Q.2 Explain fracture of shaft of humerus in detail with plan of its management. **10**
- Q.3 Explain the disease rickets in detail with its clinical presentations, radiological features and management. **10**
- Q.4 Explain the soft tissue injuries in detail. Mention the plan of treatment of bursa injury. **10**

**PART-B**

Write short notes on the following:

- Q.5 Sudeck's dystrophy. **5**
- Q.6 Clavicular fractures. **5**
- Q.7 Symptom and sign of a fracture. **5**
- Q.8 Fracture healing. **5**
- Q.9 Immobilization of a fracture. **5**
- Q.10 ORIF. **5**
- Q.11 Compartmental syndrome. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Fifth Semester  
**ORTHOPEDECS PHYSIOTHERAPY (THEORY) (PT-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 Describe disc prolapse. What are the clinical manifestations, pathophysiology and management for the same? **10**
- Q.2 Describe impingement syndrome. Explain the possible causes and treatment options for the same. **10**
- Q.3 Describe the part of above knee prosthesis. **10**
- Q.4 Explain scoliosis including assessment and conservative management. **10**

**PART-B**

- Q.5 Write a short note on 'control of stump edema'. **5**
- Q.6 What are the clinical diagnostic tests of Bicipital tendinitis? **5**
- Q.7 Explain the patho physiology of "bamboo spine" along with its clinical features. **5**
- Q.8 What are the precautions to be followed after total hip replacement? **5**
- Q.9 Describe how will you differentiate between ligament tear and meniscal tear. **5**
- Q.10 How will you manage a case of 50 years old male suffering from cervical radiculo-pathy? **5**
- Q.11 What are the clinical diagnostic features of CDH? **5**
- Q.12 Write down the clinical assessment of median nerve injury. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Fifth Semester  
**BIOMECHANICS-II (PT-503)**

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 ergonomics. What are the uses of studying ergonomics in the field of physiotherapy of activities of daily living? **10**
- Q.2 Define good posture. What are the factors responsible for maintaining a good posture? **10**
- Q.3 Discuss the biomechanics of hip joint in detail. **10**
- Q.4 Define one GAIT cycle. Write about sub phases in one GAIT cycle and draw its diagram also. **10**

**PART-B**

- Q.5 What do you understand by screw home mechanism? Name the muscles also for locking and unlocking. **5**
- Q.6 Write a short note on Lumbo Sacral angle and Cobb's angle. **5**
- Q.7 Name the ligaments, bones, and ROM of an ankle joint. **5**
- Q.8 Differentiate between running and walking on the basis of GAIT. **5**
- Q.9 Mention briefly about kitchen ergonomics. **5**
- Q.10 Write a short note on work rest scheduling. **5**
- Q.11 Write a short note on circadian rhythm and WMSD's prevention. **5**
- Q.12 Define one FSU. Why do we need to study it? **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy (Neurology) – Sixth Semester  
**NEUROLOGY AND NEUROSURGERY (PT-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 What is Duchene muscular dystrophy? Write the management of Duchene muscular dystrophy. Mention the linked related incidence in male and female. **10**
- Q.2 What is cerebral palsy? Write in detail the management of cerebral palsy. **10**
- Q.3 What is Parkinsonism? Mention in detail the clinical feature and treatment of Parkinson's disease. **10**
- Q.4 What is motor neuron disease? Mention the type of motor neuron disease. Explain the treatment. **10**

**PART-B**

- Q.5 Explain the diagnosis of Myasthenia Gravis. **5**
- Q.6 Write a note on Bell's palsy. **5**
- Q.7 Write in brief about stroke. **5**
- Q.8 Explain movement disorder. What is cerebellar ataxia? **5**
- Q.9 Mention the sign and symptom of intracranial tumors. **5**
- Q.10 Mention in detail the clinical features of muscular dystrophy. **5**
- Q.11 Write a short note on G.B. syndrome. **5**
- Q.12 Explain what is chorea. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Sixth Semester  
**NEUROLOGICAL PHYSIOTHERAPY (PT-602)**

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 in detail physiotherapy management of a patient with Guillain Barre Syndrome. **10**
- Q.2 Write in detail physiotherapy management of a patient with Duchenne muscular dystrophy **10**
- Q.3 Write in detail physiotherapy management of a patient with Parkinson's disease. **10**
- Q.4 Write in detail physiotherapy management of a patient with MCA stroke. **10**

**PART-B**

- Q.5 Describe briefly hold relax technique of PNF. **5**
- Q.6 Describe briefly various principles of motor relearning program. **5**
- Q.7 Describe briefly gait training in Parkinson's disease . **5**
- Q.8 Describe role of TENS in pain management. **5**
- Q.9 Explain briefly two point and four point gait. **5**
- Q.10 Describe briefly post polio residual paralysis. **5**
- Q.11 Describe briefly structure of neuron. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Sixth Semester  
**MANUAL THERAPY (PT-603)**

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 Kaltenborn technique in detail along with its grades. **10**
- Q.2 Describe neurodynamics in detail along with its principles? What are its indications. **10**
- Q.3 What are the differences between Maitland and Mulligan concepts of manual therapy? **10**
- Q.4 Write about all the acute and chronic physiological effects of massage therapy? **10**

**PART-B**

- Q.5 Describe lower limb tension test for tibial nerve. **5**
- Q.6 Explain tapotement technique in detail. **5**
- Q.7 Explain SNAG and NAG. **5**
- Q.8 What therapeutic measures can be used for reducing pain? **5**
- Q.9 Explain mobilization of hip joint. **5**
- Q.10 Describe the glides for increasing flexion range of motion at knee joint. **5**
- Q.11 Explain contraindications for manual therapy. **5**

**End Semester Examination, Dec. 2015**  
 Bachelor of Physiotherapy - Sixth Semester  
**RESEARCH METHODOLOGY AND BIOSTATISTICS (PT-604)**

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 The grades of 36 students in an auditing test are:

Grades	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of students	3	4	6	10	6	4	3

Find mean, median and mode.

**10**

Q.2 Explain sampling. Enumerate various sampling methods. Explain random sampling in detail with examples. **10**

Q.3 Calculate the Karl Pearson coefficient of correlation from the following table and comment on the type of correlation.

X	2	30	40	50	60	70
Y	8	12	20	10	6	4

**10**

Q.4 Describe various research designs with suitable examples. **10**

**PART-B**

Q.5 Enumerate the various statistical laws. **5**

Q.6 What is hypothesis? Discuss the various types of hypothesis in brief. **5**

Q.7 Write a short note on different measurement scales used in a research. **5**

Q.8 Write a short note on informed consent. **5**

Q.9 Graphically represent the normal distribution with complete labeling. **5**

Q.10 Two workers on the same job show the following result over a long period of time.

	Worker A	Worker B
Mean time of completing the job (minutes)	30	25
Standard deviation	6	4

a) Which worker appears to be more consistent in the time he requires to complete the job. **2½**

b) Which worker appears to be faster in completing the job. **2½**

Q.11 Calculate standard deviation of following series:

Daily wages	0-10	10-20	20-30	30-40	40-60
No. of workers	2	7	10	5	3

**5**

Q.12 What is validity? Discuss any five threats to internal validity. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Seventh Semester  
**CARDIOPULMONARY AND CARDIOPULMONARY SURGERY (PT-701)**

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 is Rheumatic fever? Discuss the clinical features, diagnosis and treatment of Rheumatic fever. **10**
- Q.2 What is Pneumonia? Describe various types of pneumonia based on etiology. **10**
- Q.3 Differentiate between myocardial infarction and angina. Explain risk factors of myocardial infarction. **10**
- Q.4 What is Pneumothorax? Classify the type of Pneumothorax. Mention a detailed plan of treatment of Pneumothorax. **10**

**PART-B**

Write short notes on:

- Q.5 Cardiac failure. **5**
- Q.6 Bronchiectasis. **5**
- Q.7 Types of incision. **5**
- Q.8 Fracture of ribs. **5**
- Q.9 Respiratory failure. **5**
- Q.10 Burger's disease. **5**
- Q.11 Cardio pulmonary resuscitation (CPR). **5**
- Q.12 Investigation of pulmonary tuberculosis. **5**



**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Seventh Semester  
**CARDIOPULMONARY PHYSIOTHERAPY (PT-702)**

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 term "cardiac rehabilitation". Write about phase-1 and phase-2 of cardiac rehabilitation. Add a note on conduction system of heart. **10**
- Q.2 How is respiration regulated? What are functions of respiratory centre. Write in detail about neuronal and chemical control of breathing. **10**
- Q.3 What are bronchopulmonary segments? Explain it in detail for both longs. Discuss appropriate position for drainage of secretion from lower and middle lobes of lungs. **10**
- Q.4 What are congenital heart disease? Discuss patent ductus arteriosus in detail with physiotherapy management. **10**

**PART-B**

- Q.5 Explain cyanosis and clubbing. Write its causes and types in brief. **5**
- Q.6 Explain COPD types and physiotherapy management. **5**
- Q.7 What is autogenic drainage and active cycle of breathing? **5**
- Q.8 Explain normal ECG. Add a special note on ECG changes in:  
a) Myocardial infarction.  
b) Atrial fibrillation.  
c) Bundle branch block. **5**
- Q.9 Explain CABG and physiotherapy management for CABG. **5**
- Q.10 Explain incision over thorax and indication for median sternotomy. **5**
- Q.11 a) Write about manual hyper inflation techniques.  
b) Explain coughing and huffing technique. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Seventh Semester  
**PEDIATRICS AND PEDIATRIC PHYSIOTHERAPY (PT-703)**

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 is polio? Explain the various stages of polio alongwith its clinical features. Explain the role of physiotherapy in the early management of polio. **10**
- Q.2 What is scoliosis? What are the various methods of assessment of scoliosis? Explain the management of scoliosis at thoracic level. **10**
- Q.3 What is cerebral palsy? Give its classification alongwith clinical features. Also highlight the management of a spastic gait. **10**
- Q.4 Differentiate between growth and development. How the pediatric growth is evaluated on various parameters? **10**

**PART-B**

- Q.5 Write a short note on PEM. **5**
- Q.6 Briefly explain clinical features of Down's syndrome. **5**
- Q.7 Management of club foot. **5**
- Q.8 How will you prevent cardiorespiratory complications in a DMD patient? **5**
- Q.9 What is Spina Bifida? Briefly explain its types. **5**
- Q.10 Discuss briefly gross motor development. **5**
- Q.11 Differentiate between limitation, impairment, disability and handicap with suitable examples. **5**
- Q.12 Briefly explain brainstem dominating reflexes. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Eighth Semester  
**COMMUNITY BASED REHABILITATION (PT-801)**

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 importance of family planning in India and various methods available for it. **10**
- Q.2 Explain the terms impairment, disability and handicap with examples. **10**
- Q.3 Discuss the social security measures for health of citizens available in India. **10**
- Q.4 Explain the role played by international red cross in maintaining and assisting the health across the world. **10**

**PART-B**

- Q.5 Write a short note on occupational health hazards. **5**
- Q.6 Outline the architectural barriers encountered by "Differently abled" in India. **5**
- Q.7 Discuss the problems encountered at community level while treating disease like TB in India. **5**
- Q.8 Explain the following abbreviations.  
MNREGA  
NRR  
UNIVF  
CRY  
ILO **5**
- Q.9 Discuss the salient features of planning a fricnic for elderly people. **5**
- Q.10 What is cohort study give example. **5**
- Q.11 List the various efforts undertaken by government to get the status "polio-free India" which was finally accomplished. **5**

## End Semester Examination, Dec. 2015

Bachelor of Physiotherapy – Eighth Semester

### **SPORTS MEDICINE AND SPORTS PHYSIOTHERAPY (PT-802)**

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 in detail the principles of rehabilitation in detail. **10**
- Q.2 Discuss the various roles and responsibilities of a physiotherapist in a sports team. **10**
- Q.3 What is Lumbar spondylolisthesis? Write down its causes, pathology, sign / symptoms and special tests for it. Add a note on its management. **10**
- Q.4 Give classification of sports injuries according to acute and overuse. Add a note on overtraining syndrome. **10**

#### **PART-B**

- Q.5 What are the various factors effecting VO<sub>2</sub> max? **5**
- Q.6 Write physiotherapy management for ankle sprain. **5**
- Q.7 Give classification of head injuries. **5**
- Q.8 Discuss any two special tests for checking shoulder instability. **5**
- Q.9 Importance of glucose super composition in endurance sports. **5**
- Q.10 Write a note on effects and uses of NSAID's. **5**
- Q.11 Write short notes on:  
a) Jumper's knee. **5**  
b) Whiplash injury. **5**
- Q.12 Write short notes on:  
a) Hyphema. **5**  
b) Epistaxis. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy - Eighth Semester  
**GENERAL PHYSIOTHERAPY (PT-803)**

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 Devise a physiotherapy treatment protocol for prevention of complications in 2<sup>nd</sup> trimester of pregnancy. **10**
- Q.2 Classify burns. What are the different types of burns? Discuss physiotherapy management for third degree of burns. **10**
- Q.3 What are occupational disorders? How can you prevent Musculoskeletal disorders? **10**
- Q.4 Highlight the role of geriatric physiotherapy in modern world. **10**

**PART-B**

- Q.5 Explain the role of physiotherapy in management of CTEV. **5**
- Q.6 What is Fibrositis? Briefly explain its physiotherapy management. **5**
- Q.7 Explain the role of physiotherapy in uterine prolapse. **5**
- Q.8 Write a short note on management of psoriasis. **5**
- Q.9 Explain complete decongestive therapy. **5**
- Q.10 How will you prevent complications the following general surgery? **5**
- Q.11 Explain the role physiotherapy in labour. **5**
- Q.12 Physiotherapy management of sinusitis. **5**

**End Semester Examination, Dec. 2015**  
Bachelor of Physiotherapy – Eighth Semester  
**DISABILITY PREVENTION AND REHABILITATION (PT-804)**

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 PWD act. **10**
- Q.2 Describe cardiac rehabilitation for CABG patients. **10**
- Q.3 What are the stages of poliomyelitis? Describe the various deformities in poliomyelitis. **10**
- Q.4 Briefly explain assessment of cerebral palsy patient. Describe physiotherapy management for spastic diplegic type of cerebral palsy. **10**

**PART-B**

- Q.5 What are the types of nerve injury? **5**
- Q.6 Explain dynamic cock up splint with its uses. **5**
- Q.7 Explain the process of creation of disability. **5**
- Q.8 Write a short note on ATNR. **5**
- Q.9 What are the types of disability? **5**
- Q.10 What is rehabilitation? Enumerate the members of rehabilitation team. **5**
- Q.11 Briefly describe the motor, sensory, autonomic effects and deformities in newborn Nerve injury. **5**