End Semester Examination, Dec. 2013  
Bachelor of Physiotherapy – First Semester  
ANATOMY-I (PT-101)

Time: 3 hrs  
Max Marks: 60

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

PART-A

Q.1 Describe a joint. Discuss its classification. Describe sub classification of diarthroses with suitable examples.  
10

Q.2 Discuss blood supply of a bone. Also, draw a diagram showing various parts of a bone.  
10

Q.3 Describe shoulder joint in detail. Discuss its applied anatomy.  
10

Q.4 Describe in detail various types of muscles.  
10

PART-B

Q.5 Define the planes of human body.  
5

Q.6 Describe in brief intercostal muscles.  
5

Q.7 Describe a bronchopulmonary segment.  
5

Q.8 Draw a well labeled diagram of heart.  
5

Q.9 Describe the main branches of aorta.  
5

Q.10 Describe deltoid muscle and discuss its actions.  
5

Q.11 Describe femoral triangle and discuss its contents.  
5

Q.12 Describe the osteology of humerus.  
5
End Semester Examination, Dec. 2013
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 erythropoiesis. What are the factors which regulate erythropoiesis? 10

Q.2 Explain various processes that bring about transport of substances across cell membrane. 10

Q.3 Describe the structure of synapse and mechanism of synaptic transmission. 10

Q.4 Define cardiac output. Describe the control of cardiac output. 10

**PART-B**

Attempt any six of the following:

Q.5 Discuss RMP and its genesis. 5

Q.6 Explain Rh-blood group and its significance. 5

Q.7 Explain reflex action. 5

Q.8 Describe intrinsic clotting mechanism. 5

Q.9 Write a note on Baroreceptors. 5

Q.10 Explain mechanism of secretion of HCl. 5

Q.11 Explain cardiac cycle. 5

Q.12 Describe functions of liver. 5
End Semester Examination, Dec 2013  
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 is Gluconeogenesis? Describe briefly the metabolic pathways involved in gluconeogenesis.  
10

Q.2 Describe the chemistry and functions of various plasma proteins. Add a note on the separation of plasma proteins.  
10

Q.3 Briefly explain the sources, requirements, biological functions and deficiency manifestations of vitamin A.  
10

Q.4 What are enzymes? Explain the mode of action of enzymes. What are the factors affecting enzyme activity?  
10

**PART-B**

Q.5 Explain the biochemical functions of calcium in the body.  
5

Q.6 Describe the classification and functions of phospholipids.  
5

Q.7 What is BMR? What are the factors which affect the BMR?  
5

Q.8 Explain the significance of HMP shunt pathway.  
5

Q.9 Write a note on atherosclerosis.  
5

Q.10 Explain the structure and functions of DNA.  
5

Q.11 Enumerate kidney function tests.  
5

Q.12 Describe competitive inhibition of enzymes.  
5
End Semester Examination, Dec. 2013
Bachelor of Physiotherapy – First Semester
FUNDAMENTALS OF PHYSIOTHERAPY (PT-104)

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

PART-A

Q.1 Write in detail on composition of forces and equilibrium. What is the role and use of gravity in human body and movement? 10
Q.2 What is hydrotherapy? Describe in detail on principles of hydrotherapy. 10
Q.3 How do you classify bones and joints? Explain along with appropriate examples. 10
Q.4 Discuss the therapeutic use of electric currents. 10

PART-B

Write short notes on the following:
Q.5 Newton’s Laws of Motion (with examples) 5
Q.6 Circuitry of therapeutic ultrasound (with appropriate diagram). 5
Q.7 Type of Levers (with appropriate anatomical examples). 5
Q.8 Write briefly on:
   a) Ohm’s Law
   b) Archimede’s principle
   c) Eddy currents
   d) Diodes
   e) Pulleys 5
Q.9 Write briefly on the following:
   a) Semiconductors
   b) Transformers 2½x2
Q.10 What are the types and functions of rectifying devices? 5
Q.11 Discuss dangers and precautions in use of therapeutic currents. 5
Q.12 Differentiate between work, energy and power. 5
End Semester Examination, Dec. 2013
Bachelor of Physiotherapy – First Semester
SOCIOMETRY (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 Describe the Indian cast system and its relevance and control on the social life of an Indian. 10
Q.2 Write a note on social groups and their role in rehabilitation, health and sickness in general. 10
Q.3 Write a comparative account on the rural and urban community with emphasis on health relates issues. 10
Q.4 Describe the social construction of sex and gender in Indian society with emphasis on gender roles in modern Indian society. 10

PART-B
Q.5 Define family and enlist its functions in short. 5
Q.6 What is socialization? What are the agencies of socialization? 5
Q.7 Write a note on the questionnaire method of studying sociology. 5
Q.8 What is juvenile delinquency? Write a short note on its features. 5
Q.9 What is social change? Explain in short about social change and deviance. 5
Q.10 Write a short note on unemployment. 5
Q.11 Write a note on association of culture with illness. 5
Q.12 Write a note on importance of leisure. 5
End Semester Examination, Dec. 2013
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 innervations of urinary bladder in detail. 10

Q.2 Describe internal capsule in detail. 10

Q.3 Describe the anatomy of brachial plexus in detail. 10

Q.4 Describe the support of uterus in detail. 10

**PART-B**

Q.5 Write short notes on:
   a) Thoracic duct  2
   b) Lymph nodes  3

Q.6 Describe in short:
   a) Neuron  2
   b) Tracts of spinal cord  3

Q.7 Describe in short the anatomy of:
   a) Trachea  2
   b) Stomach  3

Q.8 Draw the historical features of
   a) Thyroid gland  2
   b) Pituitary gland  3

Q.9 Describe urogenital diaphragm in brief.  5

Q.10 Enumerate the cranial nerves.  5

Q.11 Describe in brief the structure of middle ear.  5

Q.12 What is autonomic nervous system? Describe its parts in short.  5
End Semester Examination, Dec. 2013
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 Describe the structure of neuro-muscular junction. Write about the mechanism of transmission across neuro-muscular junction.

Q.2 Describe the role of kidney in regulation of ECF volume.

Q.3 What are the hormones secreted by pancreas? Give actions of insulin. Add a note on diabetes mellitus.

Q.4 Define vital capacity. Give its normal value. Describe the factors affecting vital capacity. What is FeV₁?

**PART-B**

Q.5 With a labeled diagram, describe the structure and functions of different parts of a neuron. What is saltatory conduction?

Q.6 Describe the structure and functions of Juxta-glomerular apparatus.

Q.7 Explain the effect of exercise on respiratory system.

Q.8 Describe the physiological basis of oral contraceptives in females.

Q.9 Describe various functions of hypothalamus.

Q.10 Enumerate non-respiratory functions of lungs.

Q.11 Describe pyramidal and extra-pyramidal systems.

Q.12 Differentiate between isotonic and isometric contraction. Give an example.
End Semester Examination, Dec. 2013
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 Discuss the principles and grades of manual muscle testing. Describe the testing procedures for right hip adductors. 10

Q.2 Describe the physiological effects of resistance exercises. Explain the OXFORD protocol for progressive resistance exercises. 10

Q.3 What do you understand by goniometry? Describe different types of goniometers. How will you test the range of motion of shoulder internal rotation? 10

Q.4 Explain the fundamental position of sitting along with three derived positions. 10

**PART-B**

Q.5 Write a short note on concave-convex rule along with examples. 5

Q.6 Enlist the movements of shoulder along with axes and planes. 5

Q.7 Classify voluntary movements. 5

Q.8 Describe the limb girth measurement for upper arm. 5

Q.9 Describe the stretching procedure for quadriceps. 5

Q.10 What are osteokinematics movements? Classify them. 5

Q.11 What are the indications and contra-indications of ROM exercises? 5

Q.12 Discuss the causes of joint range limitations. 5
End Semester Examination, Dec. 2013
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  Discuss classification of penicillin and explain MRSA.  10
Q.2  Discuss drugs used in heart failure and their side effects.  10
Q.3  What is pharmacokinetics? Explain the steps of pharmacokinetics.  10
Q.4  Explain classification of anticonvulsants. Write in detail about pheytoin.  10

**PART-B**

Write short notes on:
Q.5  Antianxiety drugs.  5
Q.6  Bioavailability.  5
Q.7  Proton pump inhibitors.  5
Q.8  Parasympathomimetic drugs.  5
Q.9  Anaphylactic shock.  5
Q.10 Classification of antihypertensives.  5
Q.11 2nd generation antihistaminics.  5
Q.12 Fluoroquinolones.  5
End Semester Examination, Dec. 2013
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 Describe the etiopathogenesis and morphology of rheumatoid arthritis. 10
Q.2 Enumerate steps involved in tissue repair. Discuss wound healing by primary intention. 10
Q.3 Discuss the laboratory diagnosis of pulmonary tuberculosis. 10
Q.4 Describe the laboratory diagnosis of HIV. 10

**PART-B**

Write short notes on / answer briefly any six of the following:

Q.5 Virchow’s triad. 5
Q.6 Four chemical mediators of inflammation. 5
Q.7 Four common sites of atherosclerosis. 5
Q.8 Differentiate between transudate and exudate. 5
Q.9 Apoptosis. 5
Q.10 Type 1 hypersensitivity. 5
Q.11 Hook worm infection. 5
Q.12 DPT vaccine. 5
Q.13 Candidosis. 5
End Semester Examination, Dec. 2013
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 Write the physiological effects of cryotherapy. Explain the factors affecting the selection of application of heat therapy or cryotherapy. 10

Q.2 Explain laser under the following:
   a) Production of laser 5
   b) Energy density 2½
   c) Indications for use 2½

Q.3 Discuss the methods of application of short-wave diathermancy. 10

Q.4 Explain the production of ultrasound waves and write the indication for use of ultrasound. 10

**PART-B**

Q.5 Explain the following:
   a) Use of biofeed back techniques
   b) Conduction 2½x2

Q.6 Write the uses of combination therapy in rehabilitation. 5

Q.7 Classify IRR radiation and discuss the production of non-luminous generators. 5

Q.8 Write the physiological effects of ultraviolet radiation. 5

Q.9 Explain the following terms:
   a) Acoustic streaming
   b) Cavitation 2½x2

Q.10 Write advantages of use of fluidotherapy. 5

Q.11 Enumerate the dangers of microwave diathermy. 5

Q.12 Explain the role of coupling media in transfer of ultrasound waves. 5
End Semester Examination, Dec. 2013
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 in details, classification of crutches along its measurement. 10
Q.2 Explain in detail, techniques of relaxation and indications of relaxation. 10
Q.3 Explain various pelvic tilts and muscles responsible for alterations. 10
Q.4 Explain in detail, various determinants of gait. 10

PART-B
Q.5 Describe briefly postural drainage. 5
Q.6 Discuss briefly flat back posture. 5
Q.7 Discuss briefly coordination exercises. 5
Q.8 Discuss briefly foot drop gait. 5
Q.9 Discuss briefly various bed rest complications. 5
Q.10 Discuss briefly physiologic responses to aerobic exercise. 5
Q.11 Discuss briefly upper limb patterns of PNF. 5
Q.12 Discuss briefly various types of suspension. 5
End Semester Examination, Dec 2013
Bachelor of Physiotherapy - Fourth Semester
BIOMECHANICS-I (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 Define biomechanics. Discuss in detail the importance of biomechanics in physiotherapy.

Q.2 Describe the biomechanics of 1st metacarpal joint in detail with suitable diagrams.

Q.3 Describe salient features of synovial joint. Give detailed anatomic diagram of synovial joint discussing various structures present in the joint.

Q.4 Give detailed classification of muscles according to their structure and function.

**PART-B**

Q.5 Write short notes on:
   a) What is the role of torque in moving a limb?
   b) Where do we find mechanical advantage? What are the uses of mechanical advantage?

Q.6 What are functions of pulleys? Discuss anatomical pulley.

Q.7 Explain concave-convex rule.

Q.8 Write a note on Newton's second law along with examples.

Q.9 Discuss the factors on which equilibrium is maintained.

Q.10 Write a note on parallel force system of vectors.

Q.11 What do you understand by center of gravity? Where is it situated in human beings?

Q.12 Write a note on types of muscle work.
End Semester Examination, Dec. 2013
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 the methods of psychology. Add a short note on biology of behavior. 10
Q.2 What is BPD? Describe the causes, diagnostic criteria and treatment of depression. 10
Q.3 Explain the types of schizophrenia. Explain first rank symptoms of schizophrenic patients. 10
Q.4 Explain therapy for psychological distress. 10

**PART-B**

Q.5 Explain anti-anxiety drugs. 5
Q.6 Explain the indications and side effects of lithium. 5
Q.7 Write a note on eating disorders. 5
Q.8 Write a short note on the types of delusional disorders. 5
Q.9 Explain PTSD. 5
Q.10 Write a short note on effective communication. 5
Q.11 Write a note on anxiety disorder. 5
End Semester Examination, Dec. 2013  
Bachelor of Physiotherapy - Fifth Semester  
ORTHOPAEDICS (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 What is crutch palsy? Outline the clinical features, causes and management of radial nerve injury.  
10

Q.2 Outline the diagnosis, investigations, differential diagnosis and management of T.B. spine.  
10

Q.3 Define fracture. Classify various types of fractures. How will you manage supracondylar fracture humerus in detail?  
10

Q.4 Explain uses of the following:  
a) Thomas splint.  
b) CPM.  
c) Ilizarov ring fixator.  
d) Skeletal traction.  
e) Titanium elastic nail.  
f) Taylor brace.  
g) Elbow and axillary crutches.  
h) Sach foot.  
i) Dennis Brown splint.  
j) Buck’s traction.  
1x10

**PART-B**

Q.5 Enumerate deformities in CTEV and its management.  
5

Q.6 Enumerate various indications of amputation? What is an ideal amputation stump?  
5

Q.7 Explain Dupuytren’s contracture. Outline its causes, clinical features and management.  
5

Q.8 Define spondylolisthesis and its grades. Enumerate its clinical and radiological features.  
5

Q.9 Explain Brodies’s abcess.  
5

Q.10 Discuss complications of Colle’s fracture.  
5

Q.11 Enumerate causes of Trendlenberg’s gait. Define trendlenberg test.  
5

Q.12 Write about functional cast brace and mention its indications and usage.  
5
End Semester Examination, Dec. 2013
Bachelor of Physiotherapy - Fifth Semester
ORTHOPAEDICS PHYSIOTHERAPY (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 various parts of prosthesis for a Below-Knee-Amputee. 10

Q.2 How will you clinically differentiate between ligament and meniscal injuries in knee? Describe the mechanism of action, signs, symptoms and PT management for an ACL injury. 10

Q.3 Discuss the stages, signs, symptoms and PT management for adhesive capsulitides. 10

Q.4 Discuss the clinical and radiological assessment of fractures. Describe the PT management guidelines for fracture management. 10

**PART-B**

Q.5 Write a short note on scoliosis. 5

Q.6 Enumerate the clinical tests for tennis elbow. 5

Q.7 How does a physiotherapist help in recovery following a TKR surgery? 5

Q.8 What are the Key stages in fracture healing? 5

Q.9 Discuss the diagnostic criteria for rheumatoid arthritis. 5

Q.10 What methods are employed for control of stump oedema in an amputee? 5

Q.11 Describe the PT management for median nerve injury. 5

Q.12 Describe the assessment for a musculoskeletal injury. 5
End Semester Examination, Dec. 2013
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 GAIT. Explain different phases of gait in sagittal plane. 10
Q.2 Describe osteokinematics, stabilizing structures and neuro-musculature of ankle joint. 10
Q.3 Discuss the importance of biomechanics in the field of physiotherapy. 10
Q.4 What do you understand by WRMSD? Mention various risk factors associated with them. 10

**PART-B**

Q.5 Enumerate the different ligaments of hip joint with their functions. 5
Q.6 Write a short note on postural assessment. 5
Q.7 Discuss the consequences of Gluteus Medius paralysis on human gait. 5
Q.8 Discuss briefly lumbo-pelvic rhythm. 5
Q.9 Write a short note on length-tension relationship. 5
Q.10 Discuss the various child carrying techniques. 5
Q.11 Explain the role of double support period in walking and running. 5
Q.12 How do you calculate the joint reaction compressive forces at knees knee joint while climbing up and descending down the stairs? Draw an appropriate diagram. 5
End Semester Examination, Dec 2013
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 Calculate coefficient of correlation between \( x \) and \( y \) by method of rank differences:
\[
x \rightarrow 15, 17, 14, 13, 11, 12, 16, 18, 10, 9
y \rightarrow 18, 12, 4, 6, 7, 9, 3, 10, 2, 5
\]

Q.2 What do you understand by the term: probability? What are different types of probability distributions? Explain the properties of normal distribution curve.

Q.3 Define sampling. Explain different sampling techniques with examples.

Q.4 Explain in detail various steps of a research proposal.

PART-B

Q.5 Write a short note on report writing in research.

Q.6 What do you understand by reliability in research? Explain different type of reliability in research with examples.

Q.7 Write short notes on:
   a) Skewness.
   b) Kurtosis.

Q.8 Define correlation. Classify it and add a note on degree of correlation.

Q.9 Define research. Enumerate different types of research. Write about objectives of research.

Q.10 Calculate Karl Pearson’s coefficient of correlation from following data:
\[
x \rightarrow 2, 3, 4, 5, 6, 7, 8
y \rightarrow 4, 7, 8, 9, 10, 14, 18
\]

Q.11 Calculate the median from following data:
\[
x \rightarrow 10, 12, 14, 16, 18, 20, 22
Frequency \rightarrow 2, 5, 12, 20, 10, 17, 3
\]

Q.12 Calculate arithmetic mean by short cut method from following data:

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End Semester Examination, Dec. 2013
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 Discuss clinical features and management of congestive cardiac failure. 10
Q.2 Define classification, complications, treatment and diagnosis of pneumonia. 10
Q.3 Discuss risk factors and treatment of myocardial infarction. 10
Q.4 Define clinical features and management of chronic bronchitis. 10

**PART-B**

Write short notes on:
Q.5 Pneumothorax. 5
Q.6 Coronary artery by pass grafting (CABG). 5
Q.7 Risk factors of atherosclerosis. 5
Q.8 Jones criteria. 5
Q.9 Ventricular septal defect. 5
Q.10 Pulmonary function test. 5
Q.11 Acute respiratory failure. 5
Q.12 Treatment of bronchial asthma. 5
End Semester Examination, Dec. 2013
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 cardiac rehabilitation. Add a note on the conduction system of the heart. 10

Q.2 Write about cardiopulmonary resuscitation. Add a short note on ventilators and their uses in the ICU. 10

Q.3 Explain the role of physiotherapist in the pre-operative phase. Add a note on thoracic incisions. List the complications of cardiothoracic surgery. 10

Q.4 Explain the chief complaints of a cardiopulmonary disorder. Add a note on the importance of history taking in assessment of cardiopulmonary disorders. 10

PART-B

Q.5 Explain the term: Mediate Percussion. 5

Q.6 Write about the stages of “Cough Reflex”. 5

Q.7 Explain the abnormal breath sounds and voice sounds. 5

Q.8 Explain the term: Fallot’s tetralogy. 5

Q.9 What do you understand by the term: flail chest? 5

Q.10 Write about valve replacement. 5

Q.11 Explain energy conservation techniques and their importance in practice. 5
End Semester Examination, Dec. 2013
Bachelor of Physiotherapy - Seventh Semester
PEdiATRICS AND PEdiATRICS 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 Briefly discuss cerebral palsy. Also explain the various classification of cerebral palsy along with the major clinical features. 10

Q.2 What is PPRP? Write down the assessment and management of an 18-year old male having difficulty in walking. 10

Q.3 Explain club foot. Give its clinical presentation, complications and management. 10

Q.4 Explain DMD including the pathophysiology and clinical features. What all measures can be taken to prolong the life of DMD child? 10

PART-B

Q.5 Write a short note on Down’s syndrome. 5

Q.6 Explain the process of disability development. 5

Q.7 Briefly explain the assessment of physical attributes in a newborn child. 5

Q.8 Write a short note on spina bifida and its types. 5

Q.9 Briefly explain various methods of assessing scoliosis. 5

Q.10 What is rickets? Give its clinical features and prevention. 5

Q.11 Briefly explain various immunization programmes in India. 5

Q.12 Write a short note on gross motor development. 5
End Semester Examination, Dec. 2013
Master of Physiotherapy (Musculoskeletal) - First Semester
FUNDAMENTAL 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 Describe how energy conservation takes place during gait? 10

Q.2 Describe the biomechanical principles in manual therapy. 10

Q.3 Discuss the importance of FCE. Elaborate the various parameters assessed during FCE and the tests used for the purpose thereof. 10

Q.4 Explain the various principles of strength training. 10

**PART-B**

Q.5 Write a short note on length-tension relationship. 5

Q.6 What do you understand by NIOSH lifting equation? 5

Q.7 Describe the principles of hydrotherapy. 5

Q.8 Classify mechanoreceptors. Describe their characteristics. 5

Q.9 Enlist the characteristics of running. Explain the importance of arm swing and trunk lean during running. 5

Q.10 Write the procedure for muscle length testing for SCM and pectoralis major. 5

Q.11 Discuss the salient features of a good posture. 5

Q.12 Differentiate between mobilizations and manipulation as described by Maitland. 5
End Semester Examination, Dec. 2013
Master of Physiotherapy (Sports) - First Semester
FUNDAMENTALS 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. Write down its uses in the field of sports physiotherapy. 10
Q.2 Define gait. What factors conserve energy during gait? 10
Q.3 Define relaxation training. Write in detail about progressive muscular relaxation technique. 10
Q.4 Discuss the biomechanics of swimming. 10

**PART-B**

Q.5 Discuss the role of proprioception and kinesthetic sensation for prevention of injuries in sports. 5
Q.6 Write the advantages of group therapy. 5
Q.7 Write a short note on modern concepts in rehabilitation. 5
Q.8 Describe briefly the principle of plyometric exercise. 5
Q.9 Enlist the different theories of pain. 5
Q.10 Classify skeletal muscle according to the fibre typing. 5
Q.11 Write a short note on principles of resistance training. 5
Q.12 Discuss the advantages of stretching in warm up and cool down phase. 5
END SEMESTER EXAMINATION, DEC. 2013
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 Critically examine the role of fatigue in relation to workplace mishaps. 10

Q.2 What is pain? Explain various theories of pain. Which theory is most accepted and why? 10

Q.3 Explain the sagittal plane analysis of gait. Also enumerate various deviations of gait in sagittal plane. 10

Q.4 What is feedback? Explain the role of augmented feedback in motor learning. Also explain its various types. 10

PART-B

Q.5 How the vestibular system helps in the maintainence of balance? 5

Q.6 Differentiate between running and walking. 5

Q.7 Explain the various parts of HKAFO. 5

Q.8 Explain the structure of synapse and conduction of impulse across it. 5

Q.9 Enumerate advantages of isometric exercises over isotonic exercises as a part of strength training. 5

Q.10 Comment on "lifting equation". 5

Q.11 Utilizing the various principles of relaxation exercises, device an exercise protocol for a group of Parkinson's patients. 5

Q.12 Highlight the importance of EMG as therapeutic tool in neurology. 5
End Semester Examination, Dec. 2013
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 Describe the structure of a research proposal. 10
Q.2 Discuss various types of research in detail. 10
Q.3 The mean and S. D. of a set of 100 observations were 40 and 5, respectively. But by mistake a value 40 was wrongly taken as 50. Calculate the correct mean and S.D. 10
Q.4 Calculate the Karl Pearson correlation co-efficient from following data:

<table>
<thead>
<tr>
<th>Marks in English:</th>
<th>48</th>
<th>35</th>
<th>17</th>
<th>23</th>
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<tr>
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<td>45</td>
<td>20</td>
<td>40</td>
<td>25</td>
<td>45</td>
</tr>
</tbody>
</table>

PART-B

Q.5 Define hypothesis. What are its types? 5
Q.6 Explain levels of measurement with examples relevant to physiotherapy. 5
Q.7 How is the level of significance determined for a study? 5
Q.8 Discuss the various principles of ethics in a study. 5
Q.9 Discuss any five threats to internal validity. 5
Q.10 Write a short note on types of errors. 5
Q.11 Calculate the median and from the following data:

<table>
<thead>
<tr>
<th>Class Interval</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-40</td>
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<td>55</td>
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<td>80-90</td>
<td>18</td>
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<tr>
<td>n</td>
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</tr>
</tbody>
</table>


5
End Semester Examination, Dec. 2013
Master of Physiotherapy (Cardiopulmonary) - Third Semester
ADVANCED THERAPEUTICS IN CARDIOPULMONARY (MPC-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 A 42-year old male was admitted to the ICU with head injuring due to road traffic accident. His Glasgow coma scale was reported to be 3 at the time of admission. Write the PT assessment and management.

Q.2 Explain the term “Heart transplantation”. Design an exercise protocol for such a patient. Include the recent evidences.

Q.3 Discuss the role of airways in the ICU and its importance for a physiotherapist.

Q.4 A 35-year old asthmatic female has been advised to receive biofeedback therapy for her illness. Explain the rationale and uses of the same.

**PART-B**

Q.5 Explain phenomenon of interdependence in preventing and treating respiratory disorders.

Q.6 Explain the physiological basis for the use of flutter and other technological adjuncts for airway clearance.

Q.7 Explain the evidence based effects of exercise training in women.

Q.8 Write a note on high frequency chest wall oscillation.

Q.9 Discuss the physiological changes in pregnancy with its effect on the cardiorespiratory system.

Q.10 What is Atelectasis? Explain the role of I.P.P.B. (Intermittent positive pressure breathing) in it.

Q.11 Explain the role of Ambu the ICU.
End Semester Examination, Dec. 2013
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 combined movement therapy? What are the different types of response patterns present to any spinal musculoskeletal dysfunctions? 10

Q.2 What are the principles of Mulligan technique? Describe in detail about headache SNAG given by Mullighan. 10

Q.3 Define PRT. Explain in detail about the technique with an example. 10

Q.4 Explain CYRIAX concept in detail. 10

**PART-B**

Q.5 Explain the principle of ultrasound for acute, subacute and chronic stages of dysfunction. 5

Q.6 Explain double crush syndrome. 5

Q.7 What is the difference between active and passive wheelchair? 5

Q.8 Explain autogenic inhibition technique with a suitable example. 5

Q.9 Write down the difference between tender point and trigger point. 5

Q.10 Explain derangement syndrome for cervical spine. 5

Q.11 Explain Mullighan mobilization for shoulder capsular dysfunction. 5
End Semester Examination, Dec. 2013
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 Write in detail principles of hydrotherapy along with their application in physiotherapy. 10

Q.2 Compare the applications of MRP and NDT in the treatment of hemiplegia. Also enumerate the similarities between the two. 10

Q.3 Explain various principles of PNF. 10

Q.4 Device the gait training protocol for a 60-year old MCA stroke patient utilizing principles of MRP. 10

**PART-B**

Q.5 Discuss Rood’s approach. 5

Q.6 Discuss Brunstrom approach. 5

Q.7 Critically analyze the use of high frequency currents in rehabilitation. 5

Q.8 Describe reactions of VOJTA. 5

Q.9 Describe briefly rhythmic initiation. 5

Q.10 Enumerate the application of EMG biofeedback in rehabilitation. 5

Q.11 Discuss various patterns of PNF. 5
End Semester Examination, Dec. 2013  
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 Discuss the role of force platform in sports training and rehabilitation.  
Q.2 Classify Somatotype and discuss the use of Somatotype in sports physiotherapy.  
Q.3 Discuss the offensive and defensive technique of football.  
Q.4 Write assessment techniques of body composition. Write the advantages of bioelectrical impedance analysis.

**PART-B**

Q.5 Write the principle of myofascial release technique.  
Q.6 Write about the different methods of age determination.  
Q.7 Enumerate the disadvantages of under-water weighing.  
Q.8 Explain the importance of isokinetic evaluation in rehabilitation.  
Q.9 Write advantages and disadvantages of body mass index.  
Q.10 Write the difference between N.A.G. and S.N.A.G.  
Q.11 Discuss the offensive technique of basket ball.
**End Semester Examination, Dec. 2013**  
Master of Physiotherapy - Third Semester  
**INTERDISCIPLINARY LEARNING (MPL-302)**

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

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

**PART-A**

Q.1  Give detailed account of health care system existing in India.  
10

Q.2  What are the basic elements of patient care management? Give detailed description.  
10

Q.3  Explain different principles which should be kept in mind while framing curriculum.  
10

Q.4  Explain Bloom’s taxonomy of educational objectives.  
10

**PART-B**

Q.5  What are the guides of professional conduct for physiotherapy?  
5

Q.6  Discuss the roles and responsibilities of a physiotherapist.  
5

Q.7  Differentiate between projected and non-projected teaching aids.  
5

Q.8  Write short notes on privatization of education.  
5

Q.9  Explain **any one** method of teaching:  
   a) Lecture method  
   b) Demonstration method  
   5

Q.10 Discuss the need and importance of lesson planning.  
5

Q.11 Differentiate between guidance and counseling.  
5
End Semester Examination, Dec. 2013
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 proteins. Discuss functions, RDAs and dietary sources of proteins. 10
Q.2 Explain the food groups and food pyramid. How do we find out energy value of food? 10
Q.3 What are the different methods of cooking? Explain cooking losses and their conservation. 10
Q.4 What are the novel foods? Describe functional foods in detail. 10

PART-B

Q.5 Define: Food, nutrition, malnutrition, health and dietetics. 5
Q.6 Explain: Physiological functions of foods. 5
Q.7 Explain: Social and psychological functions of foods. 5
Q.8 Explain: Water and electrolyte balance. 5
Q.9 Explain: Cooking objectives and their principles. 5
Q.10 Define: Genetically modified foods. 5
Q.11 Describe convenience foods. 5
End Semester Examination, Dec. 2013  
B. Sc. (N & D) - First Semester  
PHYSIOLOGY (BND-102)

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

**PART-A**

Q.1 Describe the process of digestion and absorption of carbohydrate, proteins and fat in the GIT.  
10

Q.2 Explain lung volumes and capacities.  
10

Q.3 Draw and explain the microscopic structure of nephron.  
10

Q.4 Describe various blood groups.  
10

**PART-B**

Q.5 Explain functional complexes in a cell.  
5

Q.6 Explain functions of plasma proteins.  
5

Q.7 What are the factors which affect to arterial blood pressure?  
5

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

Q.9 Explain the functions of the following:  
a) Gall bladder  
b) Liver  
c) Pancreas  
5

Q.10 Describe the functions of the thyroid gland.  
5

Q.11 Define the following:  
a) Cerebrospinal fluid  
b) Apnoea  
c) Haemopoiesis  
d) Leukopenia  
e) Cholecystectomy  
5
End Semester Examination, Dec. 2013
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  a) Define vitamins and classify them on the basis of their solubility. 5
     b) Enlist the sources and physiological functions of vitamin A. Discuss the daily requirements of vitamin A for various physiological conditions. 5

Q.2  What is mutarotation? Explain mutarotation in detail. 10

Q.3  Discuss compound lipids in detail. 10

Q.4  Define proteins. Explain the classification of proteins on the basis of their solubility and composition. 10

PART-B

Q.5  What is the goal of biochemistry? Explain Skills and Integration as an objective of biochemistry. 5

Q.6  Define lipids. Enlist biological functions of lipids. 5

Q.7  Write a note on chemical and physical properties of maltose. 5

Q.8  a) Enlist the various names of vitamin B complex. 2
     b) Write a short note on folic acid. 3

Q.9  Define the following terms:
     a) Isoelectric pH  b) Zwitterion
c) Lipoproteins  d) Amino acids
e) Tyrosine 1x5

Q.10 Write down the difference between amylose and amylopectin. 5

Q.11 Write a note on fatty acids. 5
End Semester Examination, Dec. 2013
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 SIX questions from Part-B.

**PART-A**

Q.1 Write an essay on **any one:**
   a) The spirit of adventure
   b) Science in education
   c) Impact of media on society

Q.2 Your College has recently organized the annual ceremony. Write a letter to your friend describing the annual sports ceremony, and your role in it.

Q.3 Technology has played an important role in uplifting the level of education system in India. Smart educators are starting to take advantage of these approaches to deliver learning in ways that really boost educational achievement. Write an article in 150-200 words expressing your views.

Q.4 Read the passage below and answers the questions mentioned in the end.

People moan about poverty as a great evil and it seems to be an accepted belief that if people had plenty of money, they would be happy, and get more out of life. As a rule there is more genuine satisfaction in life and more is obtained from life in the humble cottage of the poor man than in the palace of rich men, who are attended by servants and governesses at a later stage. At the same time I am glad to think they do not know what they have missed. It is because I know how sweet and happy and pure the home of honest poverty is, how free from perplexing care and social envies and jealousies, how loving and united the members are in the common interest of supporting the family that I sympathise with the rich man's boy and congratulate the poor man's son. It is for these reasons that from the ranks of the poor so many strong eminent self-reliant men have always sprung. If you read the list of the "Immortals who were not born to die" you will find that most of them have been poor.

   a) What is the popular notion about poverty?
   b) Where can one get more genuine satisfaction in life?
   c) Why does the author pity the rich man's boy?
   d) i) They do not know what they have missed. (Make it affirmative)
      ii) People moan about poverty.(Frame-WH-type)
   e) Find two other words in the passage with similar meaning to 'confusing' and self-dependent.
   f) How has the author compared rich with the poor? What is his conclusion?

**PART-B**

Q.5 Choose the correct words for the sentences given in the brackets. Each sentence carries equal marks:
   a) My mom has _______ her breakfast. (ate, eaten)
   b) People who _______ been saving money in life are always intelligent. (has, have)
   c) My friends stayed in Delhi _______ 4 years. (since, for)
   d) Either my friends or my cousins _______ coming home. (is, are)
   e) My sister who is _______ MBA has recently got an international job offer. (a, an)
Q.6 What is syllable stress and find out the number of syllabus in the following words?
   a) Communication
   b) Photography
   c) Paper
   d) Pronunciation
   e) Education

Q.7 Fill up the blanks by selecting the most appropriate option.
   a) Work hard ______ you will fail. (if, so that, otherwise)
   b) How ______ milk do you buy daily (many, much, any)
   c) Italy is ______ European country (a, an, the)
   d) He did all that he ______ do for her (may, can, must)
   e) I live in Delhi but my brother _______ in Bhopal. (living, lived, lives)

Q.8 a) Give the synonyms of the following:
      i) Bother ii) Casual iii) Courteous iv) Guarantee v) Limitation
      b) Give the antonyms of the following:
      i) Asleep ii) Below iii) Foolish iv) Fortunate v) Guest

Q.9 Fill in the blanks with suitable words given in the brackets and rewrite the sentence.
   a) I am used to ________ at night.
      i) work ii) worked iii) working
   b) His friend died ________ cholera.
      i) to ii) from iii) of
   c) She will come ________ she is invited.
      i) unless ii) since iii) if
   d) No sooner did the thief see the police ________ he ran away.
      i) because ii) than iii) that iv) as
   e) I want a pencil. Have you ________?
      i) some ii) any iii) much

Q.10 In the modern age of information, reading truly is a fundamental survival skill. Write down at tip and techniques of reading skills.

Q.11 Fill in the blanks in the following sentences according to the instructions given:
   a) Dancing, my friend loves to cook as well (Choose the appropriate word beside/ besides)
   b) She goes to Church every day. (Change the sentence to simple past)
   c) I have seen him every day in the library. (Change the sentence into negative)
   d) but/peace/can/nothing/yourself/you/bring. (Rearrange the phrase)
   e) I did call him for the lunch. (Correct the sentence)
End Semester Examination, Dec. 2013
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 Write a detailed note on ACTH, LH and FSH.  
10

Q.2 What is Henderson Hasselbalch equation? State in detail the steps of the equation.  
10

Q.3 Explain TCA in detail. Calculate the number of ATP produced in the cycle.  
10

Q.4 Draw a labeled diagram of urea cycle and explain steps in detail.  
10

**PART-B**

Q.5 Explain the process of transport across cell membrane.  
5

Q.6 Explain viscosity and factors affecting viscosity.  
5

Q.7 Write a short note on genetic code.  
5

Q.8 Define hormones. Explain the effect of insulin on carbohydrate metabolism.  
5

Q.9 Describe the main points of difference between endocytosis and exocytosis.  
5

Q.10 Write a note on formation of acetyl CoA from pyruvate.  
5

Q.11 Define and classify enzymes.  
5
End Semester Examination, Dec 2013
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 Explain the growth and development pattern during infancy. How do we introduce weaning foods to an infant? 10

Q.2 "Adequate nutrition is important during childhood". Justify your answer. 10

Q.3 Discuss the importance of adequate nutrition among adult men and women. Explain the energy, protein and calcium need of adult men and women. 10

Q.4 Discuss the nutritional needs and dietary modification during first six months of Lactation. Write the importance of breast feeding for mother and child. 10

PART-B

Q.5 Give definitions of the following:
PICA, Toxemia, Galactogogue, Colostrum, LBW 5

Q.6 Explain the developmental stages and associated complications during pregnancy. 5

Q.7 What points should be kept in mind when we plan and prepare a packed lunch for a school going child. 5

Q.8 Describe the physiological and psychological changes associated with ageing, both among men and women. 5

Q.9 Explain the nutritional requirement and feeding pattern during elderly stage. 5

Q.10 Discuss the baby friendly hospital initiatives according to WHO guidelines. 5

Q.11 How do social and psychological changes affect food pattern of an adolescent? 5
End Semester Examination, Dec. 2013
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 State the principles involved in the dietary management for typhoid and tuberculosis. Plan a diet for a male adult admitted in hospital for treatment of tuberculosis.

Q.2 Explain etiology, manifestation and dietary management of constipation. Also write a sample menu for same.

Q.3 Explain the etiology and dietary modifications for treatment of glomerulonephritis.

Q.4 What nutritional support is required in pre-and post-operative situations?

**PART-B**

Q.5 What is meant by term: therapeutic nutrition? Explain therapeutic adaptation of normal diet.

Q.6 What dietary advice should be followed or given in modifying the diet of a patient with hypertension?

Q.7 What is a kidney stone? Discuss the etiology for kidney stones.

Q.8 Write a short note on dietary management for diabetes mellitus.

Q.9 Explain myocardial infarction in brief.

Q.10 Write short notes on:
   a) Anorexia
   b) Bulimia

Q.11 What is hepatitis? How diet plays an important role in hepatitis?
End Semester Examination, Dec. 2013
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 causes, symptoms and management of Lathyrism. 10
Q.2 Differentiate between Kwashiorkor and Marasmus in detail. 10
Q.3 Discuss in detail about the etiology and symptoms of iodine deficiency disorders. 10
Q.4 Discuss the etiology and prevention of fluorosis. 10

**PART-B**

Write short notes on the following:

Q.5 Signs of recovery of PEM. 5
Q.6 Prevention of vitamin A deficiency. 5
Q.7 Symptoms of anaemia. 5
Q.8 Vitamin A status and HIV infection. 5
Q.9 Symptoms of Lathyrism. 5
Q.10 Management of Lathyrism. 5
Q.11 Management of fluorosis. 5
End Semester Examination, Dec. 2013
B. Sc. (N & D) - Third Semester
COMMUNITY RESOURCE MANAGEMENT AND EXTENSION (BND-303)

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

No. of pages: 1

PART-A

Q.1 Define resources. Explain different methods of conserving resources. 10

Q.2 What is work simplification? Explain different techniques of work simplification with the help of examples and ray diagrams. 10

Q.3 Explain different models of communication giving emphasis on the importance of various elements of communication. 10

Q.4 What factors you will keep in mind while designing audio-video/audio-visual aids? Explain giving suitable examples. 10

PART-B

Q.5 Differentiate between real direct and real indirect income. 5

Q.6 Explain communicator–communicatee relationship. 5

Q.7 Explain various qualities an extension worker should posses. 5

Q.8 Write short notes on:
   a) Different types of decisions 5
   b) Demonstration method 5

Q.9 “Planning is a foremost, dynamic and pervasive in nature” in management process. Explain. 5

Q.10 “Values, goals and standards are three motivating factors for a successful life”. Justify the statement. 5

Q.11 Write importance of directing and controlling in management process. 5
End Semester Examination, Dec. 2013  
B. Sc. (N & D) – Third Semester  
COMPUTER APPLICATIONS (BND-304)  

Time: 3 hrs \hspace{1cm} \text{Max Marks: 60} \hspace{1cm} \text{No. of pages: 1}  

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

**PART-A**  

Q.1 What is an operating system? What are the main functions of an operating system? \hspace{1cm} 10  

Q.2 What is MS WORD? Discuss any of its two features in detail. \hspace{1cm} 10  

Q.3 What do you understand by network topology? Write about any two of them in detail. \hspace{1cm} 10  

Q.4 What is internet? Discuss the various uses of internet. \hspace{1cm} 10  

**PART-B**  

Q.5 What are the uses of computer? \hspace{1cm} 5  

Q.6 Write a note on DESKTOP. \hspace{1cm} 5  

Q.7 What are the various forms of data representation? \hspace{1cm} 5  

Q.8 Discuss any two types of storage devices used in computer applications. \hspace{1cm} 5  

Q.9 Write a note on file management system. \hspace{1cm} 5  

Q.10 Convert the following:  
   \begin{align*}  
   & \text{i) } 1AC_{16} = \ ?_{10} \\
   & \text{ii) } 42_{10} = \ ?_{2} \\
   & \text{iii) } 4052_{6} = \ ?_{10} \\
   & \text{iv) } 11001_{2} = \ ?_{10} \\
   & \text{v) } 4708_{8} = \ ?_{10} \\
   \end{align*} \hspace{1cm} 1 \times 5  

Q.11 Write short notes on any two:  
   \begin{itemize}  
   \item [i)] Cell Range in spreadsheet  
   \item [ii)] MS Power PowerPoint  
   \item [iii)] Output devices \hspace{1cm} 2\frac{1}{2} \times 2  
   \end{itemize}
End Semester Examination, Dec 2013
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 Discuss in detail the holistic approach to management of fitness and health. 10
Q.2 Write in detail about mobilization of fuel stores during exercise. 10
Q.3 Explain about mediation as an alternative system for health and fitness. 10
Q.4 What are the recommended guidelines for oral rehydration therapy (ORT) for sportspersons? 10

Write short notes on:

Q.5 Sports drinks. 5
Q.6 Dietary supplements. 5
Q.7 Importance of pre-game meal. 5
Q.8 Benefits of vegetarianism. 5
Q.9 Interrelationship between health, nutrition and physical fitness. 5
Q.10 Components of specific fitness. 5
Q.11 Satvik and Tamsik foods. 5
End Semester Examination, Dec. 2013
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 is HACCP? Explain the basic principles of HACCP. 10
Q.2 Discuss about the spoilage and preservation of vegetable food group. 10
Q.3 Write a brief note on various morphological and physiological characteristics of bacteria. 10
Q.4 Discuss the indicators of food quality and safety in detail. 10

**PART-B**

Q.5 What are the various steps involved in VIRAL REPLICATION? 5
Q.6 Write a note on food borne infection. 5
Q.7 Write about any two enforcement agencies in short. 5
Q.8 What is the importance of fungi in food industry? 5
Q.9 Draw a bacterial growth curve. Discuss the various phase of bacterial growth curve. 5
Q.10 Classify of spoilage. Support your answer with help of examples for each. 5
Q.11 Write short notes **any two** of the following:
   a) Pasteurization.
   b) Molds.
   c) Yeasts.
   d) Cell wall of Bacteria. 5x2
End Semester Examination, Dec. 2013
B. Sc. (N & D) - Fifth Semester
STATISTICS AND RESEARCH METHODOLOGY (BND-502)

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

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

**PART-A**

Q.1 Explain the relative importance of arithmetic mean, median and mode as measures of central tendency in statistical analysis. Compute median from the following data:

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<th>115</th>
<th>125</th>
<th>135</th>
<th>145</th>
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<td>38</td>
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<td>3</td>
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</tbody>
</table>

Q.2 Discuss scaling in detail. Also, point out the bases for scale classification.

Q.3 From the following data, determine mode:

<table>
<thead>
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<th>Marks</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
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<td>18</td>
<td>21</td>
<td>43</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>95</td>
<td>100</td>
</tr>
</tbody>
</table>

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

**PART-B**

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

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

Q.7 Explain fully the survey method of research.

Q.8 Why tabulation is considered essential in a research study? Narrate the characteristics of a good table.

Q.9 Write short notes on the following:
   a) Types of research.
   b) Criteria of good research.

Q.10 Define correlation and also discuss its significance.

Q.11 Point out the possible sources of error in measurement.
End Semester Examination, Dec. 2013
M. Sc. (N & D) - First Semester
ADVANCED NUTRITIONAL BIOCHEMISTRY (MND-101)

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

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

**PART-A**

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

Q.2 Explain the synthesis of cholesterol in human body.

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

Q.4 Define and classify carbohydrates. Also, explain the citric acid cycle and its significance.

**PART-B**

Q.5 What are nucleic acids? Differentiate between DNA and RNA.

Q.6 Write short notes on:
   a) Induced fit hypothesis
   b) Competitive inhibition

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

Q.8 Write a short note on composition of blood.

Q.9 Write the structure of the following:
   a) AMP
   b) Sucrose

Q.10 Write a short note on water soluble vitamins. Explain any one in detail.

Q.11 What are essential amino acids? Give the structure of any three.
End Semester Examination, Dec. 2013
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 Describe the physiology of taste and smell. 10
Q.2 Discuss the basic properties of heart. 10
Q.3 What is homeostatic regulation and discuss different types of cell organelles? 10
Q.4 Explain the mechanism of urine formation. 10

**PART-B**

Q.5 What are the factors which affect the heart rate? 5
Q.6 What are the active transport processes involved in cell? 5
Q.7 Discuss the functions of any two:
   a) Pancreas
   b) Liver
   c) Small intestine 2.5x2
Q.8 Explain the electrical properties of the cardiac muscle. 5
Q.9 Explain the nervous regulation of respiration. 5
Q.10 Define the sensory system. Explain the physiology of hearing. 5
Q.11 Differentiate between diffusion and osmosis. 5
End Semester Examination, Dec. 2013
M.Sc. (N & D) – First Semester
NUTRITION FOR VULNERABLE AND SPECIAL GROUPS (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 Give a broad classification of nutrients. Explain food groups and food pyramid in detail. 10

Q.2 Discuss the importance of adequate nutrition among adult men and women. Describe the energy and protein needs of reference man and woman. 10

Q.3 Discuss the nutritional needs and dietary modifications suggested during the first six months of lactation. 10

Q.4 Explain the growth and development pattern during adolescent stage. How do psycho-social influences affect food behavior during adolescence? 10

**PART-B**

Q.5 "Pregnant woman must eat for two". Comment. 5

Q.6 Explain: Principles of deriving RDA. 5

Q.7 Describe uses and limitations of RDA. 5

Q.8 Explain: Nutritional management and feeding of elderly person. 5

Q.9 Describe nutrition in extreme climatic condition. 5

Q.10 Explain: Importance of weaning and principles of weaning. 5

Q.11 Briefly explain: Feeding of pre-school and school children. 5
End Semester Examination, Dec. 2013  
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 different principles which should be kept in mind while framing the curriculum based on the needs, situations and expectations of the society.  
**10**

Q.2 What do you mean by lecture method? Enumerate its advantages and disadvantages.  
**10**

Q.3 What are formal and informal agencies of education? Which of these two do you consider as more important? Explain with reasons.  
**10**

Q.4 “Education without philosophy is blind and philosophy without education is invalid” In the light of this statement discuss relationship between philosophy and education.  
**10**

**PART-B**

Q.5 “Education is preparation for life through life experiences”. Discuss the statement.  
**5**

Q.6 Enumerate merits and demerits of privatization of education.  
**5**

Q.7 Explain three tier system of Consumer Protection Law.  
**5**

Q.8 Define term measurement and differentiate it from evaluation.  
**5**

Q.9 Explain the three poles in the tripolar process of education.  
**5**

Q.10 Differentiate between projected and non-projected audio-visual aids.  
**5**

Q.11 Write short notes on:  
a) Role of international health agencies.  
b) Functions of nutrition and dietetics associations.  
**5**
End Semester Examination, Dec. 2013
M. Sc. (N & D) - First Semester
FOODS AND NUTRITION (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 a) Describe the role of pulses in cookery.
b) What are various factors affecting cooking of pulses? 5

Q.2 a) What is fermentation? Explain various benefits of fermentation.
b) Discuss in detail microbial changes in food during fermentation. 5

Q.3 What is food? Discuss in detail functions of food. 10

Q.4 Explain the term: Quality of proteins. Discuss any five methods of assessing quality of proteins. 10

PART-B

Q.5 Explain the relationship between pectin, acid and sugar in jelly formation. 5

Q.6 What is germination? Enlist the advantages of germination. 5

Q.7 Explain the role of nuts and oil seeds in cooking. 5

Q.8 a) Define respiratory quotient.
b) Give the RQ value of the following:
   i) Carbohydrates 1
   ii) Lipids
   iii) Proteins
   iv) Mixed diet 1x4

Q.9 Draw the structure of wheat grain and name the components. Explain the function of each component. 5

Q.10 Define poaching. List the advantages of it. 5

Q.11 Define thermic effect of food and explain the factors affecting it. 5
End Semester Examination, Dec 2013  
M. Sc. (N & D) - Second Semester  
FOOD MICROBIOLOGY (MND-201)

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

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

**PART-A**

Q.1 Explain the role of microbiology in water and food product sanitation.  
Q.2 Describe morphology and structure of prokaryotic and eukaryotic cells.  
Q.3 "Microbial growth can be affected by intrinsic and extrinsic parameter of food." Justify the statement.  
Q.4 What do you understand by food borne diseases? Explain Salmonellosis.

**PART-B**

Q.5 Discuss ALAGE.  
Q.6 Write a note on the classification of microorganisms.  
Q.7 Describe the spoilage of wines and beers.  
Q.8 Write short note on indicators of food microbial quality and safety.  
Q.9 Differentiate between food borne infection and intoxication with an example.  
Q.10 Explain HACCP.  
Q.11 Discuss fermented products and health benefits of the same.
End Semester Examination, Dec 2013
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  a) Define electrophoresis. Explain working principle of electrophoresis.

     b) Write down the difference between paper electrophoresis and gel electrophoresis.  

     5x2

Q.2  What are salts? Discuss in short the correlation between salts and pH change. Enlist 

     the properties of salts.  

     10

Q.3  Explain ELISA with its underlying principle. Enlist the application of ELISA.  

     10

Q.4  What is the principle of flame photometry? Draw a block diagram of flame 

     photometer. Discuss the applications and limitations of flame photometry.  

     10

PART-B

Q.5  What is radioimmunoassay (RIA)? Explain the method to perform RIA briefly.  

     5

Q.6  Enlist five examples of strong acids and strong bases.  

     5

Q.7  What do you understand by GAS-liquid chromatography ? Discuss the application of 

     gas chromatography in qualitative analysis.  

     5

Q.8  Write a short note on fluorimetry.  

     5

Q.9  Write a short note on 'The Hemoglobin Buffer System'.  

     5

Q.10 Name the components of a typical high performance (Pressure) liquid 

     chromatography unit and explain the components briefly.  

     5

Q.11 Write notes on following:

     a) Harris-Benedict equation for determining basal metabolic rate.  

     b) Mifflin and St. Jeor equation for determining resting energy expenditure.  

     5x2
End Semester Examination, Dec. 2013  
M. Sc. (N & D) - Third Semester  
PUBLIC HEALTH NURITION (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 in detail about the federally funded food assistance programs in India.  

Q.2 Discuss the ‘PATCH’ model of community health planning.  

Q.3 Explain the influence of private and public health sectors on food and nutrition policy development.  

Q.4 Discuss the policy making strategies.  

**PART-B**

Write short notes on the following:

Q.5 Definition of health and public health.  

Q.6 Dietary guidelines for the public.  

Q.7 Assessment of community needs for nutrition services.  

Q.8 Education to consumers and food handlers to assure safe food.  

Q.9 Nutrition services and education.  

Q.10 Impact of information technology on nutrition practice.  

Q.11 Future roles for public health nutrition practitioners.
End Semester Examination, Dec. 2013
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 Discuss the various purchasing methods in a food service institution. 10
Q.2 Trace the developmental history of food service institutions in India. 10
Q.3 What are the factors affecting menu planning? 10
Q.4 Explain various styles of service in a food service institution. 10

**PART-B**

Q.5 What are the different types of storage spaces? 5
Q.6 What are the various principles of management? 5
Q.7 Write a short note on inventory management. 5
Q.8 With the help of examples, enlist the effective use of leftovers. 5
Q.9 'Menu plays a vital role in any food service institution'. Justify. 5
Q.10 Discuss the factors to be kept in mind while designing a kitchen plan. 5
Q.11 Write a short note on budget and its types. 5
End Semester Examination, Dec. 2013
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 Explain the nutritional care for HIV infected person.  10

Q.2 Write short notes on any two:
   a) Phenyl retonuria
   b) Galactosemia
   c) Wilson’s disease  5x2

Q.3 Explain clinical features, mechanism of diagnosis and treatment for people suffering from food allergies.  10

Q.4 Write a detailed note on the nutritional care for osteoarthritis patient.  10

PART-B

Q.5 Explain the difference between HIV and AIDS.  5

Q.6 Write a short note on nutritional care for patients with rheumatoid arthritis.  5

Q.7 "Diet plays an important role in patients suffering from familial hypercholesterolemia". Discuss  5

Q.8 What is malabsorption syndrome? Explain its etiology, symptoms and dietary management.  5

Q.9 Write a brief note on the different stages of cancer?  5

Q.10 What are the complications and nutritional therapy involved in chronic alcoholism?  5

Q.11 Explain the palliative versus curative care for terminally ill patients.  5
End Semester Examination, Dec. 2013  
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 Discuss in detail various pigments present in vegetables and effect of cooking on them.  
10

Q.2 With the help of a diagram explain the structure, composition and nutritive value of a cereal grain.  
10

Q.3 Explain the process of rigor mortis and ageing in meat.  
10

Q.4 Explain the principle behind the preparation of the following:
   a) Fondant  
   b) Cake  
   c) Cottage cheese  
   d) Brittle  
   e) Mayonnaise  
2x5

**PART-B**

Q.5 Discuss the processing of tea leaves.  
5

Q.6 Write a short note on adulteration and testing.  
5

Q.7 Describe the processing and refining of oilseeds.  
5

Q.8 Discuss the role and responsibilities of a food scientist.  
5

Q.9 Differentiate between enzymatic and nonenzymatic browning.  
5

Q.10 Explain the methods of preservation of meat and poultry.  
5

Q.11 Give reasons for the following:
   a) Boiling over of milk  
   b) Apple turning brown on cutting and keeping  
2½x2
End Semester Examination, Dec. 2013
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 Write short notes on:
   a) Antioxidants
   b) Leavening agent

Q.2 Write a detailed note on food labeling.

Q.3 How does physical method help in objective evaluation of food? Discuss any five methods.

Q.4 Explain: HACCP as a method to prevent food borne illness.

**PART-B**

Q.5 Define the following terms:
   a) No added sugar
   b) Low calorie
   c) High fibre
   d) Low sodium
   e) Low saturated fat

Q.6 Write a note on lathyrisism.

Q.7 Discuss trace chemicals and nutrition related hazards associated with foods.

Q.8 What is the importance of sensory evaluation in the food industry? Explain.

Q.9 Write short notes on:
   a) Stabilisers and thickeners
   b) Chelating agents

Q.10 Write a note on pressor amines.

Q.11 Discuss the advantages and disadvantages of sensory and objective evaluations.
End Semester Examination, Dec. 2013
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 Discuss sensory evaluation in refining the screening procedure for a product. 10
Q.2 Discuss phases in food product development in detail. 10
Q.3 Define new food product development. Explain factors shaping new product development in detail. 10
Q.4 Write in detail about any two case studies discussing about new food product development. 10

**PART-B**

Q.5 Classify new food product development in brief. 5
Q.6 Enlist new products in food science and food ingredient industry in brief. 5
Q.7 Discuss product life cycle. 5
Q.8 Explain reasons for new food product development in brief. 5
Q.9 Discuss food safety and food spoilage in brief. 5
Q.10 Write a short note on recipe development and scale up. 5
Q.11 Write in brief about the use of various new ingredients to suit product functions during its development process. 5