

MANIPAL UNIVERSITY

**THIRD YEAR B.Sc. R.R.T. & D.T./B.Sc. C.V.T./B.Sc. M.R.T/B.Sc. R.T./B.Sc. M.L.T./
FOURTH YEAR B.O.T./B.P.T. DEGREE EXAMINATION – JUNE 2016**

**SUBJECT: BIostatISTICS & RESEARCH METHODOLOGY/RESEARCH
METHODOLOGY & STATISTICS/BIostatISTICS/ BASIC BIostatISTICS &
RESEARCH METHODOLOGY/RESEARCH METHODOLOGY AND BIostatISTICS**

Wednesday, June 01, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

1. Differentiate between nominal and ordinal variables with examples.

(4 marks)

2. **Classify the following into the four different scales of measurement:**

2A. Cell counts

2B. Blood group

2C. Pain score

2D. IQ

(4 marks)

3. **State true or false:**

3A. Pearson's correlation coefficient always takes values ≥ 0

3B. Incidence is not affected by the duration of disease

3C. Convenience sampling is a procedure that assures that each element in the population have equal chance of being included in the sample

3D. Health information system is sample based

(4 marks)

4. At rest pulse rates for 22 athletes at a meet are

68 60 78 70 63 68 66 57 74 65 57

66 73 67 68 56 74 64 67 77 72 64

4A. Compute mean, median and range of this data

4B. Construct a frequency distribution table along with relative frequencies for this data using class intervals 55 – 60, 60 – 65, 65 – 70 and so on.

4C. Draw a frequency polygon for the frequency table constructed above.

(6+5+4 = 15 marks)

5. Obtain interquartile range for the data regarding number of dental caries in twelve children less than ten years of age.

6 0 2 1 0 4 6 0 4 2 8 3

(8 marks)

6. Define coefficient of variation. Mean and standard deviation of pulse rate for a group of individuals is 76 and 3 beats per minute respectively. The mean and standard deviation of height is 64 and 2 inches respectively. Which of the two characteristics is more consistent?

(5 marks)

7. **Define the following:**

- 7A. Case fatality rate
7B. Total fertility rate
7C. Crude death rate

(2 marks × 3 = 6 marks)

8. The amount of weight gained during pregnancy was assessed and was found to be approximately normally distributed with a mean weight gain of 10 kgs and a standard deviation of 3kgs. Calculate the proportion of pregnant women who gained weight.

- 8A. At most 16 kgs
8B. Between 10 to 13 kgs
8C. At least 7 kgs

(3 marks × 3 = 9 marks)

9. **Write short notes on:**

- 9A. Inter rater reliability
9B. Descriptive epidemiology
9C. Systematic sampling
9D. Sample registration system
9E. Components of health information system

(5 marks × 5 = 25 marks)



MANIPAL UNIVERSITY
THIRD YEAR B.O.T. DEGREE EXAMINATION – JUNE/JULY 2016
SUBJECT: BIO-ENGINEERING
(2011 BATCH)

Saturday, July 02, 2016

Time: 10:00-11:30 Hrs.

Max. Marks: 40

- ✍ **Answer ALL questions.**
✍ **Draw diagrams and flow charts wherever appropriate.**

✍ **Long Questions:**

1. Explain in detail various parts of Metallic A.F.O. List out its indications. (10 marks)
2. Explain in detail various parts of Below Knee Prosthesis. (10 marks)
3. Write the various deformities and Orthotics Management of C.T.E.V. (5 marks)
4. **Write short notes on any THREE of the following:**
 - 4A. Terminal Device
 - 4B. ASH Brace
 - 4C. Cervical Collar
 - 4D. Harness system used in B.E Prosthesis

(5 marks × 3 = 15 marks)



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THIRD YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: ORTHOPAEDICS & RHEUMATOLOGY/CLINICAL ORTHOPAEDICS & RHEUMATOLOGY
(COMMON FOR OLD & 2008 REGULATION/2011 BATCH)

Thursday, June 16, 2016

Time: 10:00-13:00 Hrs.

Maximum Marks: 80

✍ Answer SECTION "A" and SECTION "B" in two separate answer books.

SECTION "A": ORTHOPAEDICS/CLINICAL ORTHOPAEDICS: 40 MARKS

1. Describe the pathomechanics, clinical features and management of rotator cuff tear. (10 marks)
2. Define cerebral palsy. Describe the management of flexion deformity of the knee in cerebral palsy. (10 marks)
3. **Write short notes on:**
 - 3A. Continuous Passive Motion (CPM)
 - 3B. Tennis elbow and its management
 - 3C. Boston brace
 - 3D. Compartment syndrome

(5 marks × 4 = 20 marks)

SECTION "B": RHEUMATOLOGY: 40 MARKS

1. **Write short notes on any FOUR of the following five questions:**
 - 1A. Enumerate clinical features and management of ankylosing spondylitis.
 - 1B. Outline management of acute attack of gout.
 - 1C. Discuss clinical features and management of rheumatoid arthritis.
 - 1D. Outline clinical features and management of osteoarthritis.
 - 1E. Describe clinical features and management of systemic sclerosis.

(5 marks × 4 = 20 marks)

✍ Answer any TWO FULL questions out of the following three questions:

- 2A. What are the organisms causing septic arthritis?
- 2B. What are the different investigations done to establish the diagnosis of septic arthritis?
- 2C. What is the medical management of septic arthritis?

(3+3+4 = 10 marks)

- 3A. Enumerate aetiopathogenesis of gout.
- 3B. Enlist clinical features of gout.
- 3C. Discuss Radiographic findings in gout.

(3+4+3 = 10 marks)

- 4A. Enumerate clinical features of psoriatic arthritis.
- 4B. What are the different types of psoriatic arthritis?
- 4C. Discuss the management of psoriatic arthritis.

(3+4+3 = 10 marks)



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THIRD YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2016

**SUBJECT: NEUROSCIENCES
(OLD & 2008 REGULATION/2011 BATCH)**

Saturday, June 18, 2016

Time: 10:00-13:00 Hrs.

Maximum Marks: 80

✍ Answer any FOUR questions. Each question carries TWENTY marks.

1. Stroke
 - 1A. Risk factors
 - 1B. Symptoms of embolic stroke
 - 1C. Management

2. Multiple sclerosis
 - 2A. Etiopathogenesis clinical features
 - 2B. Management

3. Neurological manifestation of AIDS
 - 4A. Subdural hematoma
 - 4B. Subarachnoid hemorrhage
 - 4C. Diffuse axonal injury
 - 4D. Brain abscess

- 5A. Absence seizures
- 5B. 3rd nerve palsy
- 5C. Dysphagia
- 5D. Herpes encephalitis



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THIRD YEAR B.O.T. DEGREE EXAMINATION – JUNE/JULY 2016

SUBJECT: OCCUPATIONAL THERAPY IN ORTHOPAEDICS AND SURGICAL CONDITIONS
(2011 BATCH)

Tuesday, June 21, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

- ✍ Answer ALL the questions
- ✍ Draw the diagram wherever necessary.

✍ **Long Questions:**

1. Describe Erb's palsy and its impact on functional capacity. Explain occupational therapy management for the same.

(4+6+10 = 20 marks)

2. Define rheumatoid arthritis and its classical manifestation. Discuss occupational therapy plan for a lady with rheumatoid hand.

(8+12 = 20 marks)

3. **Write short notes on:**

3A. Psychological and emotional aspect of cancer

(10 marks)

3B. Define skin graft and explain its types

(2+8 = 10 marks)

3C. Outline the treatment plan for low back pain

(10 marks)

3D. Any five major occupational therapy role in upper limb orthopedic conditions

(10 marks)



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THIRD YEAR B.O.T. DEGREE EXAMINATION – JUNE/JULY 2016

**SUBJECT: OCCUPATIONAL THERAPY IN NEUROLOGICAL, GERIATRIC AND
MEDICAL CONDITIONS
(2011 BATCH)**

Thursday, June 23, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ Answer ALL the questions.

✍ Long Questions:

1. Write about the basic limb synergies in hemiplegia. Write in detail the retraining of proximal upper extremity control from stage 1 to 3 as described by Brunnstrom.
(5+15 = 20 marks)
2. Describe occupational therapy management for patients with multiple sclerosis.
(20 marks)
3. **Write short notes on:**
 - 3A. Characteristics of upper and lower motor neuron lesion
(5+5 = 10 marks)
 - 3B. NDT handling techniques for Inhibition and facilitation of upper extremity
(5+5 = 10 marks)
 - 3C. Explain effects of Parkinson disease on client's motor system.
(10 marks)
 - 3D. Interventions for in coordination to facilitate independence in basic activities of daily living.
(10 marks)



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THIRD YEAR B.O.T. DEGREE EXAMINATION – JUNE/JULY 2016

SUBJECT: OCCUPATIONAL THERAPY IN REHABILITATION
(2011 BATCH)

Saturday, June 25, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ Answer ALL the questions.

✍ Draw diagram wherever necessary.

✍ Long Questions:

1. Describe the instrumentation of EMG biofeedback with a neat diagram and explain its treatment application for muscle re-education.

(10+10 = 20 marks)

2. Describe any five data collection tools used for assessment of architectural barriers. Discuss accessibility barriers in a bathroom for wheel chair bound patient and suggest modifications.

(10+10 = 20 marks)

3. Write short notes on:

3A. Wheel chair seating principles

(10 marks)

3B. OT management for cancer related fatigue

(10 marks)

3C. Warning signs of insulin related illness and its significance for an occupational therapist

(5+5 = 10 marks)

3D. Mobile arm support

(10 marks)



MANIPAL UNIVERSITY

THIRD YEAR B.P.T./B.O.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: COMMUNITY MEDICINE & SOCIOLOGY/SOCIAL & PREVENTIVE MEDICINE AND SOCIOLOGY (2008 REGULATION/2011 BATCH)

Tuesday, June 28, 2016

Time 10:00-13:00 Hours

Maximum Marks: 80

✍ Answer ALL questions.

✍ Answer SECTION 'A' and SECTION 'B' in TWO separate answer books.

SECTION 'A': COMMUNITY MEDICINE/SOCIAL AND PREVENTIVE MEDICINE: 40 MARKS

✍ Long question:

1. Discuss Vitamin A under the following headings: Dietary sources, deficiency disorders, treatment, prevention and control.

(2+3+2+3 = 10 marks)

2. Short answers:

- 2A. Explain the concept of Herd immunity with examples
- 2B. 'Pneumoconiosis' and its prevention
- 2C. Risk factors for Non –communicable diseases
- 2D. Levels of prevention with suitable examples
- 2E. Iceberg phenomenon of diseases with examples
- 2F. Advantages and disadvantages of case-control study over cohort study design

(30 marks)

SECTION 'B': SOCIOLOGY: 40 MARKS

1. List the health problems of rural and urban communities. Explain their role in public health.
(4+6 = 10 marks)

2. Write the meaning of Socialisation. Describe the process of socialization.
(2+8 = 10 marks)

3. What is social change? How does social change cause stress and deviance? Suggest measures to overcome them.
(2+4+4 = 10 marks)

4. Write short notes on the following:

- 4A. Family and Psychosomatic diseases
- 4B. Meaning and consequences of beggary on health

(5+5 = 10 marks)



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THIRD YEAR B.O.T. DEGREE EXAMINATION – JUNE/JULY 2016

SUBJECT: OCCUPATIONAL PERFORMANCE: ADL, WORK AND LEISURE
(2011 BATCH)

Thursday, June 30, 2016

Time: 10:00-11:30 Hrs.

Max. Marks: 40

Answer ALL the questions.

1. Define communication. Describe the process of communication cycle.
(3+7 = 10 marks)
2. Discuss the role of culture in caregiving occupations with suitable examples.
(10 marks)
3. **Write short notes on:**
 - 3A. Levels of work
 - 3B. Occupational therapy interventions to support parenting a child with a disability
 - 3C. View of play and leisure as context
 - 3D. Levels of independence to grade ADL performance

(5 marks × 4 = 20 marks)

