

## 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 2017**

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

Thursday, June 01, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

1. List and define different types of variables.

(6 marks)

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

2A. Stages of cancer

2B. Blood group

2C. Pain score (mild/moderate/sever)

2D. Age

(4 marks)

3. Thirty seven persons were examined for haemoglobin level in their blood (mg per dl). Construct a frequency polygon for the data.

<b>Hb (mg/dl)</b>	11 - 12	12 - 13	13 - 14	14 - 15	15 - 16	16 - 17
<b>No. of persons</b>	5	10	15	4	2	1

(4 marks)

4. Compute 65<sup>th</sup> percentile and standard deviation for the following data regarding weight of infants (in kg.).

2.32    2.36    2.89    3.03    3.86    2.90    4.01    3.69    3.07    2.87

(10 marks)

5. Data below shows the number of colonies of bacteria grown on ten agar plates. Calculate median and interquartile range.

60    70    100    160    140    80    110    95    130    115

(10 marks)

6. **Define the following:**

6A. Perinatal mortality rate

6B. Crude birth rate

(2+2 = 4 marks)

7. Describe correlation using scatter plots.

(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 12 kgs and a standard deviation of 4 kgs. Calculate the proportion of pregnant mothers who gained weight:
- 8A. Less than 20 kgs
  - 8B. Between 12 to 16 kgs
  - 8C. At least 8 kgs

(2 marks  $\times$  3 = 6 marks)

9. **Write short notes on:**

- 9A. Reliability
- 9B. Epidemiology and its aims
- 9C. Systematic sampling
- 9D. Characteristics of good hypothesis
- 9E. Disease Registries
- 9F. Case reports

(5 marks  $\times$  6 = 30 marks)



**MANIPAL UNIVERSITY****FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: MEDICINE**  
**(COMMON FOR 2011, 2009 AND OLD REGULATION)**

Saturday, June 03, 2017

Time: 10:00 – 13:00 Hrs

Maximum Marks: 80

**✍ Answer any THREE of the following:**

1. Classify anemia. Discuss the clinical features, investigations and treatment of iron deficiency anemia.
2. Discuss the clinical features, complications, investigation and management of myocardial infarction.
3. Classify bronchial asthma. Discuss the clinical features, investigations and management of bronchial asthma.
4. Mention the causes of cirrhosis of liver and discuss the clinical features, complications and management.

(15 marks × 3 = 45 marks)

**5. Answer all the following questions:**

- 5A. Obesity
- 5B. Hypothyroidism
- 5C. Complications and management of acute renal failure
- 5D. Investigations and management of pulmonary tuberculosis
- 5E. Etiology and risk factors of hypertension
- 5F. Hemophilia A
- 5G. Management of needle prick injury

(5 marks × 7 = 35 marks)



**MANIPAL UNIVERSITY**  
**FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017**

**SUBJECT: SURGERY**  
**(COMMON FOR 2011, 2009 AND OLD REGULATION)**

Monday, June 05, 2017

Time: 10:00 –13:00 Hrs.

Maximum Marks: 80

**Answer Section “A” and Section “B” in TWO separate answer books.**

**SECTION A: CARDIOVASCULAR AND THORACIC SURGERY (40 MARKS)**

1. Classify Congenital heart diseases. Discuss in detail about various types and management of atrial septal defect.  
(10 marks)
  
2. Discuss aetio-pathogenesis of coronary artery disease. Write in detail about diagnosis and management of myocardial infarction.  
(10 marks)
  
3. **Write short notes on any TWO:**
  - 3A. Thoracoplasty
  - 3B. Lung abscess
  - 3C. Indications and complications of tube thoracostomy(10 marks × 2 = 20 marks)

**SECTION B: GENERAL SURGERY (40 MARKS)**

1. Discuss in brief about lymph node stations of neck. Write in brief about types and indications of modified radical neck dissection.  
(10 marks)
  
2. Write in brief about aetio-pathogenesis of peptic ulcer disease. Describe various modalities in treatment of peptic ulcer disease.  
(10 marks)
  
3. **Write short notes on any FOUR:**
  - 3A. Skin graft
  - 3B. Vestibular dysfunction
  - 3C. Post operative management in abdominal surgery
  - 3D. Systemic inflammatory response syndrome
  - 3E. Trans urethral resection of prostate - Indications and complications(5 marks × 4 = 20 marks)



Reg. No.																			
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

# MANIPAL UNIVERSITY

## FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017

### SUBJECT: EXERCISE PHYSIOLOGY (2011 REGULATION)

Thursday, June 08, 2017

Time: 10:00-11.30 Hrs

Maximum Marks: 40

---

✍ **Answer ALL questions.**

✍ **Essay question:**

1. Methods of assessing energy consumption during exercise.

(10 marks)

2. **Write short notes on:**

2A. Exercise in osteoporosis

2B. Health benefits following resistance training

2C. Explain the mechanism by which stroke volume increases following endurance training

2D. Discuss the physiological effects of strength training on muscles.

(5 marks × 4 = 20 marks)

3. **Write brief notes on:**

3A. Primary signs of overtraining syndrome

3B. Female athlete triad

3C. Risks of diuretics as ergogenic aid

3D. What are the effects of anaerobic training in children

3E. Amenorrhea

(2 marks × 5 = 10 marks)





**MANIPAL UNIVERSITY****FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: PHYSIOTHERAPY IN CARDIOPULMONARY AND GENERAL CONDITIONS  
(COMMON FOR 2011, 2009 AND OLD REGULATION)**

Saturday, June 10, 2017

Time: 10:00-13:00 Hrs

Maximum Marks: 80

✍ **Answer ALL questions.**

**1. Essay questions:**

- 1A. Define cardiac rehabilitation. Discuss in detail the phase one cardiac rehabilitation of a patient who underwent coronary artery bypass grafting.
- 1B. Discuss the pulmonary rehabilitation programme for 48 years old male diagnosed as having chronic obstructive pulmonary disease.

(10 marks × 2 = 20 marks)

**2. Write short notes on:**

- 2A. Write in brief about oxygen delivery system.
- 2B. Write in brief about the assisted coughing technique.
- 2C. Discuss in detail about postural drainage therapy in acute head injury patients.
- 2D. Write in detail about active cycles of breathing technique.
- 2E. Write about biomechanics changes in COPD.
- 2F. Write about Post-operative physiotherapy management for open cholecystectomy.
- 2G. Discuss the role of physiotherapy management in different phases of ARDS.
- 2H. What are the physiological changes associated with positioning.

(5 marks × 8 = 40 marks)

**3. Write brief notes on:**

- 3A. List the indications and complication of incentive spirometer.
- 3B. Two neurophysiologic facilitation of breathing techniques.
- 3C. Types of Inspiratory muscle training.
- 3D. Grades of clubbing
- 3E. Name four complications of endotracheal suctioning.
- 3F. What is the difference between huffing and coughing?
- 3G. Mention the two findings of collapsed x-ray.
- 3H. Mention the difference between IMV and SIMV.
- 3I. List the complication of manual hyperinflation.
- 3J. Types of heart failure

(2 marks × 10 = 20 marks)



# MANIPAL UNIVERSITY

## FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017

### SUBJECT: COMMUNITY PHYSIOTHERAPY (2009 & 2011 REGULATION)

Monday, June 12, 2017

Time: 10:00-13:00 Hrs

Maximum Marks: 80

**Answer ALL questions.**

**1. Essay questions:**

1A. Describe the age related changes seen in the musculo-skeletal system. Elaborate the various acute and chronic adaptations seen in the musculo-skeletal system response to exercise.

(5+5 = 10 marks)

1B. Explain the physiological basis of exercise prescription in each trimester of pregnancy. What are the precautions to be taken in prescribing antenatal exercises?

(5+5 = 10 marks)

**2. Write short answers on:**

2A. Physiotherapy management for osteoporosis.

2B. Describe task analysis.

2C. Disability evaluation in lower limb amputations.

2D. Exercise prescription for adolescent female athlete

2E. Elaborate the guidelines for safe lifting practices.

2F. Role of physiotherapist in community based rehabilitation.

2G. Write the physiotherapy management of lymphedema.

2H. Role of exercise based intervention program in the prevention of obesity

(5 marks × 8 = 40 marks)

**3. Write brief answers on:**

3A. What is job simulation?

3B. Mention two principles of CBR.

3C. Mention the deformities seen in CTEV.

3D. Mention any two deformities and the orthotic devices used for the same in Leprosy.

3E. Define ergonomics.

3F. Mention any two roles of a rehabilitation nurse.

3G. List any two age related changes to the sensory system.

3H. Mention any two physiological effects of relaxin hormone.

3I. Name any two muscles of the pelvic floor.

3J. Mention any four team members for industrial therapy.

(2 marks × 10 = 20 marks)



Reg. No.										
----------	--	--	--	--	--	--	--	--	--	--

# MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: ELECTRODIAGNOSIS  
(2011 REGULATION)

Wednesday, June 14, 2017

Time: 10:00-11.30 Hrs

Maximum Marks: 40

✍ **Answer ALL questions.**

✍ **Essay Question:**

1. What is EMG? Mention the different types of needle electrodes used in EMG studies. Explain the abnormal potentials recorded at rest.

(2+3+5 = 10 marks)

2. **Write short notes on:**

2A. Explain the properties of a nerve

2B. EMG Bio-feedback for pain

2C. What is F-wave? Describe its implications in electrodiagnosis.

2D. Describe the MNCV recording procedure

(5 marks × 4 = 20 marks)

3. **Write brief answers on:**

3A. What is Chronaxie?

3B. What is 'sweep'?

3C. What is rise time in Motor Unit Potential?

3D. Mention any two technical factors affecting EMG recordings.

3E. What is Blink reflex?

(2 marks × 5 = 10 marks)

