

MANIPAL UNIVERSITY

**THIRD YEAR 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 – DECEMBER 2016**

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

Thursday, December 15, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

☞ **Answer ALL the questions.**

1. Explain the steps in a research process. (5 marks)

2. Form a frequency table along with relative frequencies for the ages of 48 patients given below. (Class intervals: 0 – 15, 15 – 30, 30 – 45, so on)

30	39	53	47	64	31	10	36	29	40	22	40
76	33	46	17	38	50	30	34	25	36	39	36
15	65	39	43	62	30	07	47	32	36	42	42
47	27	32	39	24	57	37	43	43	54	40	39

(5 marks)

3. Compute the range, 85th percentile, first and third quartiles for the data on duration in days of chicken pox disease in 10 patients.

14	15	14	17	17	13	15	11	10	14
----	----	----	----	----	----	----	----	----	----

(10 marks)

4. The duration of time for the first exposure to HIV infection to AIDS diagnosis is called the incubation period. The incubation periods of a random sample of 10 HIV infected individuals is given below (in yrs):

7.5	11.0	10.5	10.0	6.5	13.5	12.0	7.5	11.5	10.0
-----	------	------	------	-----	------	------	-----	------	------

 - 4A. Calculate mean, median and standard deviation of incubation period.
 - 4B. If the number 6.5 above were changed to 9.5, what would happen to the mean and median? State whether each would increase, decrease or remain the same.(10 marks)

5. With the help of scatter diagram explain correlation. (6 marks)

6. **Classify the following into different scales of measurement:**

a) Age	b) Gender	c) Temperature (°F)	d) Marital status
--------	-----------	---------------------	-------------------

(4 marks)

7. **Define the following:**

7A. Net reproduction rate

7B. Still birth rate

7C. Incidence rate

(2 marks \times 3 = 6 marks)

8. Serum cholesterol is an important risk factor for coronary disease. Serum cholesterol is approximately normally distributed with mean 200 mg/dL and standard deviation 20 mg/dL.

8A. If the clinically desirable range for cholesterol is < 180 mg/dL, then what proportion of people has clinically desirable levels of cholesterol?

8B. Some investigators feel that only cholesterol levels over 240 mg/dL indicate a high – enough risk for heart disease to warrant treatment. What proportion of the population does this group represent?

(2 marks \times 2 = 4 marks)

9. **Write short notes on:**

9A. Face validity and content validity

9B. Quantitative variables

9C. Simple random sampling

9D. Skewness and kurtosis

9E. Census

9F. Cross sectional studies

(5 marks \times 6 = 30 marks)



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

MANIPAL UNIVERSITY
FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: MEDICINE
(2011 REGULATION)

Friday, December 16, 2016

Time: 10:00 – 13:00 Hrs

Maximum Marks: 80

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

1. Mention the types of bronchial asthma. Discuss the clinical features, investigations and management of bronchial asthma.
2. Discuss the clinical features of organophosphorus poisoning and its management.
3. Discuss the etiology, clinical features, complications and management of cirrhosis of liver.
4. Classify hypertension. Discuss the clinical features, complications, investigations and management of essential hypertension.

(15 marks × 3 = 45 marks)

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

- 5A. Obesity
- 5B. Complications of diabetes mellitus
- 5C. Acute respiratory distress syndrome
- 5D. Deep vein thrombosis
- 5E. Management of needle prick injury
- 5F. Clinical features and management of myocardial infarction
- 5G. Metabolic syndrome

(5 marks × 7 = 35 marks)



Reg. No.

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

**SUBJECT: SURGERY
(2011 REGULATION)**

Saturday, December 17, 2016

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. Describe causes of peripheral arterial disease. Write a note on surgical management of a patient with Critical limb ischaemia. (10 marks)

2. Describe aetio-pathogenesis of pulmonary tuberculosis. Write in brief about investigation and management of pulmonary tuberculosis. (10 marks)

3. **Write short notes on any TWO:**

3A. Bronchoscopy

3B. Tetralogy of fallot

3C. Post traumatic diaphragmatic hernia

(10 marks × 2 = 20 marks)

SECTION B: GENERAL SURGERY (40 MARKS)

1. Classify blood transfusion reaction. Discuss in brief about diagnosis and management of a case of ABO mismatch. (10 marks)

2. Write briefly about indications and management of mastectomy. Discuss in brief about lymphoedema in a patient who has underwent mastectomy. (10 marks)

3. **Write short notes on any FOUR**

3A. Indications and complications of tracheotomy

3B. Management of peptic ulcer disease

3C. Parotitis and its management

3D. Normal visual pathway and various types of neural blindness

3E. Management of anal incontinence

(5 marks × 4 = 20 marks)

Reg. No.

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

**SUBJECT: EXERCISE PHYSIOLOGY
(2011 REGULATION)**

Monday, December 19, 2016

Time: 10:00-11.30 Hrs.

Maximum Marks: 40

✍ **Answer ALL questions.**

✍ **Essay question:**

1. Elaborate the principles of strength training. Describe in detail any one standardized protocol for strength training.

(10 marks)

2. **Write short notes on:**

- 2A. Discuss the indication and termination criteria in Submaximal exercise testing.
2B. Thermo-regulation during exercise.
2C. Explain the concepts of power and strength in terms of muscular activity.
2D. Considerations for exercise prescription in children.

(5 marks × 4 = 20 marks)

3. **Write brief answers on:**

- 3A. Define strength.
3B. Principle of specificity.
3C. What is Aerobic capacity?
3D. Name four Ergogenic aids.
3E. What is Oxygen debt?

(2 marks × 5 = 10 marks)



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

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016 SUBJECT: PHYSIOTHERAPY IN CARDIOPULMONARY AND GENERAL CONDITIONS (COMMON FOR 2011 & 2009 REGULATION)

Tuesday, December 20, 2016

Time: 10:00-13:00 Hrs

Maximum Marks: 80

✍ **Answer ALL questions.**

1. **Essay questions:**

- 1A. A patient 50 years old had suffered an attack of M.I. He has been suggested for conservative Management: plan a cardiac rehabilitation programme for him.
- 1B. List the physiotherapy assessment for peripheral vascular diseases. How will you manage a patient who has developed venous ulcer on the left foot?

(10 marks × 2 = 20 marks)

2. **Write short notes on:**

- 2A. Explain chest manipulation techniques to mobilize secretions in lung.
- 2B. Which techniques are used for strengthening respiratory muscles?
- 2C. Write a note on humidification.
- 2D. Write in brief about modes of mechanical ventilation.
- 2E. Write about postoperative physiotherapy management for reconstruction of buccal carcinoma.
- 2F. Pulmonary function changes in obstructive and restrictive lung diseases.
- 2G. Write on role of physiotherapy in right lower lobe bronchiectasis. Add a note on home programme.
- 2H. What are physiological changes seen in pneumonectomy?

(5 marks × 8 = 40 marks)

3. **Write brief notes on:**

- 3A. Explain pump-handle movement.
- 3B. What are crepitations and ronchi?
- 3C. What is Jacobson's technique of relaxation?
- 3D. What is PEEP?
- 3E. List the indication and complication of oxygen therapy.
- 3F. What are different types of artificial airways?
- 3G. List the complication of upper abdominal surgery.
- 3H. What is cyanosis? What are the central causes for cyanosis?
- 3I. What is intermittent claudication?
- 3J. Define Tetralogy of Fallot.

(2 marks × 10 = 20 marks)

Reg. No.

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

**SUBJECT: EXERCISE PHYSIOLOGY AND ELECTRODIAGNOSIS
(2009 REGULATION)**

Wednesday, December 21, 2016

Time: 10:00-13.00 Hrs

Maximum Marks: 80

- ✍ Answer both SECTION A and SECTION B in same answer book.
- ✍ Answer ALL questions.

SECTION A - EXERCISE PHYSIOLOGY

✍ **Essay questions:**

1. Principles of prescribing aerobic exercise.

(10 marks)

2. **Write short notes on:**

- 2A. Brief note on the components of health related fitness
- 2B. Chronic adaptations to exercise on the cardiovascular system
- 2C. Fatigue and its causes
- 2D. Principles of flexibility training

(5 marks × 4 = 20 marks)

3. **Write brief answers on:**

- 3A. Any two complication of prolonged immobilization.
- 3B. Define periodization.
- 3C. What is Lactate threshold?
- 3D. Mention any two ergogenic aid used by wrestlers.
- 3E. Define DOMS.

(2 marks × 5 = 10 marks)

SECTION B – ELECTRODIAGNOSIS

4 **Essay questions:**

Classify nerve injuries. Write about the electrodiagnostic findings in axonotemesis.

(2+8 = 10 marks)

5 **Write short notes on:**

- 5A. Action potential and its propagation across the nerve.
- 5B. Explain F wave.
- 5C. Explain normal potentials during minimal volitional activity of EMG.
- 5D. Write short notes on the mechanism of EMG biofeedback.

(5 marks × 4 = 20 marks)

6. **Write brief answers on:**

- 6A. Motor unit
- 6B. Significance of fibrillation potentials
- 6C. Insertional activity
- 6D. Any two factors affecting nerve conduction studies
- 6E. Chronaxie

(2 marks × 5 = 10 marks)



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

MANIPAL UNIVERSITY
FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: ELECTRODIAGNOSIS
(2011 REGULATION)

Wednesday, December 21, 2016

Time: 10:00-11.30 Hrs

Maximum Marks: 40

Answer ALL questions.

1. Essay Question:

Classify nerve injuries. Write about the electrodiagnostic findings in axonotemesis.

(2+8 = 10 marks)

2. Write short notes on:

- 2A. Action potential and its propagation across the nerve.
- 2B. Explain F wave.
- 2C. Explain normal potentials during minimal volitional activity of EMG.
- 2D. Write short notes on the mechanism of EMG biofeed back.

(5 marks × 4 = 20 marks)

3. Write brief answers on:

- 3A. Motor unit
- 3B. Significance of fibrillation potentials
- 3C. Insertional activity
- 3D. Any two factors affecting nerve conduction studies
- 3E. Chronaxie

(2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY
FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: COMMUNITY PHYSIOTHERAPY
(2009 & 2011 REGULATION)

Thursday, December 22, 2016

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 in response to exercise.

1B. Write the physiotherapy care for patients with Parkinson's disease.

(10 marks × 2 = 20 marks)

2. Write short notes on:

2A. Describe task analysis.

2B. Pathomechanics and Management of diastasis recti.

2C. Explain briefly the stages of labour.

2D. Physiotherapy management in pelvic inflammatory disease.

2E. Pulmonary changes and clinical manifestations in ageing.

2F. Chronic adaptations to exercises in elderly.

2G. Harmful effects of exposure to vibration in occupational settings.

2H. Pathomechanics of repetitive strain injuries.

(5 marks × 8 = 40 marks)

3. Write brief answers on:

3A. What is stress incontinence?

3B. What is BMI?

3C. Mention any four occupational lung diseases.

3D. What is stoop lifting?

3E. Appropriate setting up of a computer monitor in a work station.

3F. What is early intervention?

3G. List any two guidelines for safe lifting.

3H. List any four effects of progesterone in pregnancy.

3I. Mention any four work related musculoskeletal disorders of upper limb.

3J. Mention any two principles of exercise prescription for weight reduction.

(2 marks × 10 = 20 marks)



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

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: PHYSIOTHERAPY IN CARDIOPULMONARY AND GENERAL CONDITIONS
(OLD REGULATION)

Friday, December 23, 2016

Time: 10:00-13:00 Hrs

Maximum Marks: 80

Answer ALL questions.

1. **Essay questions:**

1A. Plan out a pulmonary rehabilitation program for COPD.

(10 marks)

1B. Define cardiac rehabilitation. Discuss in detail the phase I cardiac rehabilitation of a patient who has undergone coronary artery bypass grafting.

(2+8 = 10 marks)

2. **Write short notes on:**

2A. Physiological changes associated with various positioning.

2B. Procedure and precautions while performing endo tracheal suctioning.

2C. Discuss the different types and effects of breathing exercise.

2D. Physiotherapy management in right lower lobe bronchiectasis. Add on the home program.

2E. Physiotherapy management for a patient suffering from right sided pleural effusion, and having an intercostal drainage tube.

2F. Physiotherapy management in the different phases of ARDS.

2G. Post operative physiotherapy management for cholecystectomy.

2H. Differences between an arterial and a venous ulcer.

(5 marks × 8 = 40 marks)

3. **Write brief answers on:**

3A. Define cardiac rehabilitation

3B. Define ejection fraction

3C. Types of heart failure

3D. What is Intermittent claudication?

3E. List out the ABG findings in respiratory acidosis.

3F. Any two Complications of manual hyper inflation

3G. What is Mantoux test?

3H. Shamrouth's sign

3I. Equal pressure point

3J. Define cardiac output.

(2 marks × 10 = 20 marks)

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

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

**SUBJECT: SURGERY
(OLD REGULATION)**

Saturday, December 24, 2016

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 chest injuries. Discuss clinical features, complication and management of flail chest.
(10 marks)
2. Enumerate various risk factors for coronary artery disease. Discuss various treatment options. Add a note on minimally invasive CABG.
(10 marks)
3. **Write short note on any TWO:**
 - 3A. Discuss the various indications, surgical technique and post-operative care of tube thoracostomy (ICTD).
 - 3B. Discuss the management of peripheral vascular disease (Investigations and treatment)
 - 3C. Classify congenital heart disease. Write a short note on tetralogy of Fallot's.
(10 marks × 2 = 20 marks)

SECTION B: GENERAL SURGERY (40 MARKS)

1. Classify shock, discuss the management of hemorrhagic shock following road accident.
(10 marks)
2. Enumerate various types of abdominal incisions, discuss the post-operative care following upper abdominal surgery.
(10 marks)
3. **Write short notes on any FOUR:**
 - 3A. Classify flaps. Write a note on free flap.
 - 3B. Enumerate the indications of tracheostomy and its complications.
 - 3C. Classify ulcer and add a note on trophic ulcer.
 - 3D. Emergency management of thermal burns
 - 3E. Incisional hernia
(5 marks × 4 = 20 marks)

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

MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: EXERCISE PHYSIOLOGY AND ELECTRODIAGNOSIS (OLD REGULATION)

Monday, December 26, 2016

Time: 10:00-13.00 Hrs

Maximum Marks: 80

- ✍ Answer both SECTION A and SECTION B in same answer book.
- ✍ Answer ALL questions.

SECTION A - EXERCISE PHYSIOLOGY

✍ Essay questions:

1. Explain in detail the cardiovascular responses and adaptations to aerobic exercise.
(10 marks)

2. Write short answers on:

- 2A. Heat acclimatization
- 2B. Potential hazards of hyperbaric environment
- 2C. Methods of determining one repetition maximum to measure muscular strength
- 2D. Metabolic adaptations to aerobic training

(5 marks × 4 = 20 marks)

3. Write brief answers on:

- 3A. What is the principle of specificity?
- 3B. Define flexibility.
- 3C. Define power.
- 3D. What is lactate threshold?
- 3E. Name the hormones that regulate water and electrolyte balance during exercise.

(2 marks × 5 = 10 marks)

SECTION B – ELECTRODIAGNOSIS

✍ Essay question:

4. Define electromyography. Explain the various stages of EMG activity in detail.
(2+8 = 10 marks)

5. Write short answers on:

- 5A. Discuss about Blink reflex.
- 5B. Explain the principles of motor nerve conduction studies.

- 5C. Explain the differences between H reflex and F wave.
5D. Explain about EMG biofeedback.

(5 marks \times 4 = 20 marks)

6. **Write brief answers on:**

- 6A. What is sweep speed?
6B. What is Axon reflex?
6C. What is size principle?
6D. What is resting membrane potential?
6E. What is orthodromic conduction?

(2 marks \times 5 = 10 marks)



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

MANIPAL UNIVERSITY
FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016
SUBJECT: COMMUNITY MEDICINE & SOCIOLOGY
(OLD REGULATION)

Tuesday, December 27, 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

✍ **Essay question:**

1. Discuss the epidemiological features of Acquired Immuno Deficiency Syndrome (AIDS). Describe briefly the clinical manifestations of HIV infection.

(6+4 = 10 marks)
2. **Write short notes on:**
 - 2A. Describe the medical measures for prevention of occupational diseases.

(5 marks)
 - 2B. Define a carrier. Classify and explain the different types of carriers giving examples.

(1+4 = 5 marks)
 - 2C. Describe the major strategies under the second phase of Reproductive and Child Health Programme.

(5 marks)
 - 2D. Describe the risk factors for stroke. What are the measures for the prevention of stroke?

(2+3 = 5 marks)
 - 2E. Describe the different levels of prevention for control of cancer.

(5 marks)
 - 2F. Write a short note on the etiology of iron deficiency anemia. Describe the treatment modalities.

(2+3 = 5 marks)

SECTION 'B': SOCIOLOGY: 40 MARKS

1. What is social control? Write the meaning and the role of morals and law in the regulation of human behavior.

(2+8 = 10 marks)

2. What is juvenile delinquency? What are the consequences of juvenile delinquency on health? Suggest remedies to prevent it. (2+4+4 = 10 marks)
3. What is community? Explain the role of rural and urban communities in public health. (2+8 = 10 marks)
4. **Write short notes on the following:**
- 4A. Effect of sickness on family
- 4B. Social change and deviance (5+5 = 10 marks)



Reg. No.

--	--	--	--	--	--	--	--	--	--

MANIPAL UNIVERSITY
FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2016

SUBJECT: MEDICINE
(OLD REGULATION)

Wednesday, December 28, 2016

Time: 10:00 – 13:00 Hrs

Maximum Marks: 80

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

1. Discuss the pathophysiology, clinical features and management of pulmonary tuberculosis.
2. Classify leukemia. Discuss the clinical features, investigations and treatment of chronic myeloid leukemia.
3. Describe the clinical features, complications, investigations and management of cirrhosis of liver.
4. Classify diabetes mellitus. Discuss the clinical features, complications and management of diabetes mellitus.

(15 marks × 3 = 45 marks)

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

- 5A. Deep vein thrombosis
- 5B. Management of needle stick injury
- 5C. Obesity
- 5D. Lymphedema
- 5E. Etiology and complications of hypertension
- 5F. Complications of chronic kidney disease
- 5G. Cor pulmonale

(5 marks × 7 = 35 marks)

