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MANIPAL UNIVERSITY

<mark>FOURTH YEAR B.P.T.</mark> AND THIRD YEAR B.Sc. C.V.T. / B.Sc. M.L.T.
DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: RESEARCH METHODOLOGY & BIOSTATISTICS / BIOSTATISTICS & RESEARCH
METHODOLOGY (PAPER IV) / BIOSTATISTICS
(COMMON FOR OLD, 2009, 2011 REGULATION/OR & 2011 SCHEME / NR)

Tuesday, December 15, 2015

Time: 10:00-13:00 Hrs.

Max. Marks: 80

1. What are the steps involved in a research process?

(5 marks)

2. Define with distinction the validity and reliability.

(5 marks)

3. Differentiate between nominal and ordinal variables with examples.

(5 marks)

4. Classify the following into different scales of measurements (Nominal, Ordinal, Interval and Ratio)
    a) Name   b) Age   c) Religion
    d) Designation of teachers   e) Pain score

(5 marks)

5. Write a note on systematic sampling.

(5 marks)

6A. The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a histogram.

Reaction in mm	Number of persons
8 – 10	30
10 – 12	43
12 – 14	54
14 – 16	43
16 – 18	32
18 – 20	23
20 – 22	14
22 – 24	04

6B. Form a frequency table and calculate relative frequencies for the given data regarding number of babies born during a year in 40 community hospitals
(class intervals: 20 – 25, 25 – 30, 30 – 35 and so on)

42	32	59	35	46	37	55	52	34	54
48	45	49	32	57	30	55	27	45	56
53	30	53	21	34	39	56	59	58	49
54	29	42	42	54	32	26	40	28	53

(5+5 = 10 marks)

7A. Calculate median and standard deviation of the following data:

Hb level (in gm%):   14   10   11   12   10   13   14   11   13   16

7B. Define coefficient of variation. Mean and standard deviation of pulse rate for a group of individuals is 75 and 3 beats per minute respectively. The mean and standard deviation of height is 65 and 3 inches respectively. Which of the two characteristics has more variability?

(5+5 = 10 marks)

8. The total cholesterol values for a certain population are approximately normally distributed with a mean of 200 mg/dl and a standard deviation of 20 mg/dl. Find the probability that an individual picked at random will have cholesterol level.

a) Between 220 mg/dl and 240 mg/dl
b) Less than 160 mg/dl

(5 marks)

9. Explain the assessment of correlation by means of scatter diagram.

(5 marks)

10. Enumerate the uses and sources of health information system.

(5 marks)

11A. Explain the terms rate and radio with examples.

11B. During the year 2012, there were 750 deaths in a town. The estimated mid-year population of the town for the same year was 25050. Calculate the crude death rate. What are the limitations of crude death rate?

(5+5 = 10 marks)

12. What are the uses of epidemiology? Explain case series study design with its merits and demerits.

(10 marks)

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1. Discuss clinical features, diagnosis and treatment of Pulmonary tuberculosis.

    (4+2+4 = 10 marks)

2. **Write short notes on any SIX of the following:**

2A. Aortic regurgitation

2B. Differential diagnosis of Chest pain

2C. Cardiac arrest and CPR

2D. Management of Acute pancreatitis

2E. Idiopathic Thrombocytopenic Purpura (ITP)

2F. Food Poisoning

2G. Hyperparathyoidism

2H. Arterial Blood Gas Analysis

(5 marks × 6 = 30 marks)

3. Discuss Aetiology and pathogenesis of diabetes mellitus. Add a note on oral hypoglycemic agents.

    (2+4+4 = 10 marks)

4. **Write short notes on any SIX of the following:**

4A. Definition and classification of PUO (FUO)

4B. Opportunistic infections in HIV

4C. Helicobacter pylori in acid peptic disease

4D. Consequences of chronic alcohol misuse

4E. Types of heart failure

4F. Hyperkalemia

4G. Pellagra

4H. Light's criteria

(5 marks × 6 = 30 marks)

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MANIPAL UNIVERSITY

FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

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

Thursday, December 17, 2015

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 the various types of Cyanotic congenital heart disease.

(10 marks)

2. Discuss the Risk factors and management of Ischaemic Heart Disease.

(10 marks)

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

3A. Pancoast Tumour
3B. Indication, procedure and complications of Intercostal tube drainage
3C. Bronchiectasis

(10 marks × 2 = 20 marks)

SECTION B: GENERAL SURGERY (40 MARKS)

4. Mention the Complications of Blood Transfusion and their Management in Polytrauma.

(10 marks)

5. Discuss the etiology, clinical features and management of chronic calculous Cholecystitis.

(10 marks)

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

6A. Management of Electrical Burns
6B. Hyperkalemia
6C. Describe types of Abdominal incissions
6D. Define and classify Flaps.
6E. Describe the types of Modified radical mastectomy.

(5 marks × 4 = 20 marks)

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FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: EXERCISE PHYSIOLOGY AND ELECTRODIAGNOSIS
(COMMON FOR OLD AND 2009 REGULATION)

Friday, December 18, 2015

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

✍ **Write long answer on:**

1. Write in detail the acute changes and chronic adaptation to exercises training in cardiovascular and musculoskeletal systems.

(5+5 = 10 marks)

2. **Write short answers on:**

2A. Write in brief about oxygen deficit and oxygen debt with diagram.

2B. Write the complications of prolonged bed rest and methods to prevent the complications.

2C. Write the principles for aerobic training.

2D. Write the guidelines for prescribing exercise program to adolescent populations.

(5 marks × 4 = 20 marks)

3. **Write brief notes on:**

3A. Define microgravity.

3B. Write any four ergogenic aids.

3C. Write the energy values for Fat and Carbohydrates.

3D. Define anaerobic threshold.

3E. Define agility.

(2 marks × 5 = 10 marks)

SECTION B – ELECTRODIAGNOSIS

✍ **Write long answer on:**

4. Write the nerve conduction study principles. Describe the median motor nerve conduction procedure and its normal values.

(5+3+2 = 10 marks)

5. **Write short answers on:**

5A. Define EMG biofeedback and write the uses and indication of EMG biofeedback.

5B. Draw and explain the panel diagram in electro diagnostic study.

5C. Write the physiological properties of nerve.

5D. Describe the methods and uses of 'H' reflex.

(5 marks × 4 = 20 marks)

6. **Write brief notes on:**

6A. Define axon reflex.

6B. Define blink reflex.

6C. Define neurotomesis.

6D. Define chronaxie.

6E. Write any two difference between EMG and traditional electro diagnostic tests.

(2 marks × 5 = 10 marks)

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FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: EXERCISE PHYSIOLOGY
(2011 REGULATION)

Friday, December 18, 2015

Time: 10:00-11.30 Hrs   Maximum Marks: 40

✍ **Answer ALL questions.**

✍ **Write long answer on:**

1. Write in detail the acute changes and chronic adaptation to exercises training in cardiovascular and musculoskeletal systems.

(5+5 = 10 marks)

2. **Write short answers on:**

2A. Write in brief about oxygen deficit and oxygen debt with diagram.

2B. Write the complications of prolonged bed rest and methods to prevent the complications.

2C. Write the principles for aerobic training.

2D. Write the guidelines for prescribing exercise program to adolescent populations.

(5 marks × 4 = 20 marks)

3. **Write brief notes on:**

3A. Define microgravity.

3B. Write any four ergogenic aids.

3C. Write the energy values for Fat and Carbohydrates.

3D. Define anaerobic threshold.

3E. Define agility.

(2 marks × 5 = 10 marks)

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FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: PHYSIOTHERAPY IN CARDIOPULMONARY AND GENERAL CONDITIONS
(COMMON FOR 2011, 2009 AND OLD REGULATION)

Saturday, December 19, 2015

Time: 10:00-13:00 Hrs

Maximum Marks: 80

✍ **Answer ALL questions.**

1A. Plan a cardiac rehabilitation program for a 50 year old man, following myocardial infarction.

(10 marks)

1B. Discuss normal bronchial hygiene mechanism. What are the different techniques used in physiotherapy treatment.

(5+5 = 10 marks)

2. **Short notes:**

2A. Chest manipulation techniques to mobilize lung secretions

2B. Types of nebulizers

2C. Oxygen delivery systems

2D. Assisted coughing techniques

2E. Physiotherapy management in tetanus

2F. List the Humidification and its uses

2G. Modes of mechanical ventilation

2H. Elaborate simple tests to identify arterial diseases

(5 marks × 8 = 40 marks)

3. **Brief answers:**

3A. Indications and complications of incentive spirometer.

3B. Pump handle movement.

3C. Mention the differences between bronchial and vesicular breath sounds.

3D. What are Rales and Ronchi?

3E. Any two Complications of radiotherapy.

3F. Two neuro physiologic facilitation of breathing techniques.

3G. Types of inspiratory muscle training.

3H. Types of heart block

3I. What is PEEP?

3J. Indications and complications of oxygen therapy.

(2 marks × 10 = 20 marks)

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FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: ELECTRODIAGNOSIS
(2011 REGULATION)

Monday, December 21, 2015

Time: 10:00-11.30 Hrs

Maximum Marks: 40

✍ **Essay:**

1. Explain the factors affecting the nerve conduction studies. Explain the procedure for the measurement of motor nerve conduction velocity of median nerve.

(4+6 = 10 marks)

2. **Short notes:**

2A. Draw a panel diagram of EMG instrumentation and briefly explain the parts of the instrument

2B. Explain the composition of peripheral nerves

2C. Describe H reflex in detail

2D. Explain in detail the structure and function of muscle spindle

(5 marks × 4 = 20 marks)

3. **Brief answers:**

3A. Mention four indications for EMG Biofeedback.

3B. Define action potential.

3C. Define EMG Biofeedback.

3D. What is axon reflex?

3E. What is neuropraxia?

(2 marks × 5 = 10 marks)

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FOURTH YEAR B.P.T. DEGREE EXAMINATION – DECEMBER 2015

SUBJECT: COMMUNITY BASED REHABILITATION/COMMUNITY PHYSIOTHERAPY
(OR / 2009 & 2011 REGULATION)

Tuesday, December 22, 2015

Time: 10:00-13:00 Hrs　　　　　　　　　　　　　　　　Maximum Marks: 80

✍ **Answer ALL questions.**

✍ **Essay questions:**

1A. Define ergonomics. Describe an ergonomic evaluation.

1B. Write a comprehensive physiotherapy based management program for people with stroke.

(10+10 = 20 marks)

2. **Short notes:**

2A. Physiotherapy management of spasticity

2B. Describe the various types of lifting

2C. Elaborate the biological theories of ageing

2D. Role of physiotherapist in geriatric rehabilitation

2E. Explain multi-disciplinary team approach. Briefly describe the role played by each member of the team

2F. Compare and contrast CBR and an institution based rehabilitation program

2G. Role of physiotherapist in the management of burns

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

(5 marks × 8 = 40 marks)

3. **Brief answers:**

3A. What is lipofuscin?

3B. Mention any four age related changes in CNS.

3C. Mention two exercises for pelvic floor muscle strengthening.

3D. List any four roles of a rehabilitation nurse in CBR.

3E. Any two roles of multipurpose health worker in CBR.

3F. Mention four physiological effects of estrogen.

3G. Any two physiotherapeutic interventions for management of incoordination.

3H. Muscles of the pelvic floor.

3I. Second stage of labor.

3J. Mention any two submaximal exercise tests for elderly.

(2 marks × 10 = 20 marks)

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