

Question Paper

Exam Date & Time: 19-Dec-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BPT DEGREE EXAMINATION - DECEMBER 2023
SUBJECT: PTH2101 - BIOMECHANICS
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Define Gait. Explain in detail the phases of gait cycle. (20)
(2+18 = 20 marks)
- 2) Explain in detail hip joint forces and muscle function during unilateral and bilateral stance. (20)
- 3) Explain in detail the kinetics and kinematics of spinal flexion and extension. (10)
- 4) Explain grips and pinches in precision handling in detail. (10)
- 5A) Explain in detail the biomechanics of squatting. (5)
- 5B) Write the function of Anterior cruciate ligament in knee in detail. (5)
- 5C) Explain in detail the structure of arches of foot. (5)
- 5D) Write the kinetics and kinematics of elbow function and extension. (5)
- 5E) Explain pump handle and bucket handle mechanism during respiration. (5)
- 5F) Explain scapulohumeral rhythm. (5)
- 6A) Define nutation and counter nutation. (2)
- 6B) Write the muscles of ankle dorsiflexion. (2)
- 6C) Define Stride duration. (2)
- 6D) Write any two deformities of knee. (2)
- 6E) Write any two ligaments of hip joint. (2)

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Question Paper

Exam Date & Time: 15-Dec-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION - DECEMBER 2023
SUBJECT: PTH2102- THEORETICAL CONCEPTS IN EXERCISE THERAPY - I
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the principles of resistance training. Discuss the determinants of resistance training (10+10=20 marks) (20)
- 2) Explain the contraindications and precautions of mobilization. Discuss the physiological and therapeutic effects of joint mobilization. (5+5+5+5=20 marks) (20)
- 3) Classify stretching. Explain the determinants for stretching techniques (2+8=10 marks) (10)
- 4) Explain the principles of group exercises (10)
- 5A) Discuss the adjuncts to stretching (5)
- 5B) Explain the merits and demerits of home program (5)
- 5C) Explain the grades of mobilization (5)
- 5D) Discuss weight bearing and non-weight bearing exercises (5)
- 5E) Explain the modes of traction (5)
- 5F) Compare and contrast mass exercise and group exercise (5)
- 6A) List the precautions for strength training (2)
- 6B) Define stretching (2)
- 6C) Define Progressive Resistance Exercise (2)
- 6D) List the contraindications for stretching (2)
- 6E) What is arthrokinematics? (2)

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Question Paper

Exam Date & Time: 21-Dec-2023 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BOT DEGREE EXAMINATION - DECEMBER 2023
SUBJECT: PTH2103 - THEORETICAL CONCEPTS IN ELECTROTHERAPY- II
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain Faradism under pressure. Explain any THREE indications and contraindications EACH for nerve and muscle stimulation. (10)
(4+6 = 10 marks)
- 2) Describe interferential current. Explain the modes, parameters and electrode placement techniques used in the application of interferential currents. (10)
(2+2+3+3 = 10 marks)
- 3A) Explain Chronaxie and rheobase with a graphical representation of Strength duration curve. (5)
(2½+2½ = 5 marks)
- 3B) Explain the TWO physiological effects of interrupted galvanic current. (5)
- 3C) Explain any TWO effects of constant direct current. (5)
- 3D) Choose any TWO electrophysiological modalities for the management of acute pain. Explain how it helps in the management of acute pain. (5)
(2+3 = 5 marks)
- 4A) List different types of Transcutaneous Electrical Nerve Stimulation. (2)
- 4B) List any TWO dangers of iontophoresis. (2)
- 4C) What is combination therapy? (2)
- 4D) List any TWO advantages of Faradic - Galvanic test. (2)
- 4E) List any FOUR types of currents used for nerve and muscle stimulation. (2)

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