

Question Paper

Exam Date & Time: 22-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION-JUNE 2024
SUBJECT: BPT 201- BIOMECHANICS
(SCHEME 2016)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Describe the articular surfaces of the tibiofemoral and patellofemoral joint. Describe patellar movements. Add a note on the role of patella in quadriceps function (20)
(5+5+10 = 20 marks)
- 2) Define gait. Classify gait cycle . Describe spatial and temporal variables of gait . Explain joint motions and muscle activity during the stance phase of the gait cycle. Add a note on the kinematics and muscle of gait in the sagittal plane (20)
(2+2+6+10 = 20 marks)
- 3) Explain the structure and function of the extensor mechanism of the hand (10)
- 4) Explain kinematics of the hip joint (10)
- 5A) Explain Scapulohumeral Rhythm (5)
- 5B) Describe kinematics of Pronation and supination of the forearm (5)
- 5C) Explain sagittal plane analysis of posture (5)
- 5D) What is Centre-Edge angle and explain its significance? (5)
- 5E) List the lumbar ligaments and explain their role in spinal stability (5)
- 5F) Describe movements of the temporomandibular joints (5)
- 6A) What is ulnar variance? (2)
- 6B) What is Genu Valgum? (2)
- 6C) Mention functions of pulleys of the hand (2)
- 6D) List the ligaments of the lumbar spine (2)
- 6E) What is closed packed position of the hip joint? (2)

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Question Paper

Exam Date & Time: 19-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BPT/BOT/BSc. (CVT / PHYSICIAN ASSISTANT / AOTT / RRT & DT / CND / RT / EMT / PFT) DEGREE

EXAMINATION - JUNE 2024

SUBJECT: MCB2103/MICR 201 - MICROBIOLOGY

(2022/2020/2019/2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Classify hypersensitivity. Explain the mechanism and mediators of type I hypersensitivity reactions. (10)
(2+5+3 = 10 marks)
- 2) Explain the prevention and investigations in healthcare associated infections. (10)
(5+5 = 10 marks)

3) Write short notes on:

- 3A) Bacterial growth curve (5)
- 3B) Mechanisms of autoimmunity (5)
- 3C) Explain the structure of gram negative cell wall (5)
- 3D) Laboratory diagnosis of fungal infections (5)

4) Answer the following:

- 4A) Classify protozoa with examples (2)
- 4B) Name TWO enriched media (2)
- 4C) Classify immunity (2)
- 4D) Write TWO contribution of Louis Pasteur (2)
- 4E) List any TWO live attenuated vaccines. (2)

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Question Paper

Exam Date & Time: 18-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BSc. (BPT / RT / EMT / MIT / PHYSICIAN ASSISTANT / RRT & DT / PFT / BAOTT / CVT / BOT)
DEGREE EXAMINATION - JUNE 2024
SUBJECT: PAT2103 - PATHOLOGY
(2020/2022 SCHEME)

Answer ALL questions.
Draw diagrams wherever necessary.

Marks: 50

Duration: 120 mins.

Answer all the questions.

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| 1A) | Define necrosis. | (1) |
| 1B) | Describe the various types of necrosis and give clinical examples of each.
(6+3 = 9 marks) | (9) |
| 2A) | Define anemia. Classify anemia based on morphology.
(1+2 = 3 marks) | (3) |
| 2B) | List the clinical features, mention the etiology and discuss the basic laboratory investigations for iron deficiency anemia.
(2+2+3 = 7 marks) | (7) |
| 3A) | List the clinical features of rheumatoid arthritis and osteoarthritis. | (5) |
| 3B) | Describe the events in wound healing by primary intention with diagrams. | (5) |
| 3C) | Describe the morphology of tuberculoid and lepromatous leprosy. | (5) |
| 3D) | List the clinical features and discuss the basic laboratory investigations of hemophilia. | (5) |
| 4A) | Name two main types of carcinogens with one example each. | (2) |
| 4B) | Mention the causes of cardiac failure. | (2) |
| 4C) | List the etiological factors for gastric ulcer. | (2) |
| 4D) | Define liver failure. List any two causes. | (2) |
| 4E) | Define embolism. List any two types of embolism. | (2) |

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Question Paper

Exam Date & Time: 18-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BSc. (BOATT / RT / MIT / RRT & DT / BOT / BPT / PFT) DEGREE EXAMINATION - JUNE 2024
SUBJECT: PATH 201/PATH-201 - PATHOLOGY
(2016/2019 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Define anaemia. Describe the aetiology, clinical features and laboratory investigations of Sickle cell anaemia. (10)
(2+2+3+3 = 10 marks)
- 2) Define & list the types of chronic obstructive airway disease. Describe the aetiology, clinical features and types of emphysema. (10)
(1+2+2+3+2 = 10 marks)
- 3A) Cellular changes in acute inflammation (5)
- 3B) Aetiology & clinical features of rheumatic heart disease. (5)
- 3C) Types and aetiology of Renal failure. (5)
(1+4 = 5 marks)
- 3D) Tumour metastasis. (5)
- 4A) Define jaundice & list ANY TWO causes for Post hepatic jaundice. (2)
- 4B) Describe the peripheral blood findings in acute myeloid leukaemia (2)
- 4C) Define karyotyping & give TWO examples for autosomal dominant disorders (2)
- 4D) Describe the gross pathology of gastric ulcer (2)
- 4E) Describe the morphology of tuberculoid leprosy (2)

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Question Paper

Exam Date & Time: 18-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. HEALTH INFORMATION MANAGEMENT DEGREE EXAMINATION-JUNE 2024
SUBJECT: PATH-203- PATHOLOGY
(SCHEME 2016)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Define acute leukaemia. Classify acute myeloid leukaemia according to French-American-British system (FAB). Describe the clinical feature of acute myeloid leukaemia. (10)
(2+4+4 = 10 marks)
- 2A) Explain the cardinal signs of acute inflammation (5)
- 2B) Describe the sequelae of acute inflammation (5)
- 3A) Describe the aetiology and predisposing factors of a tumor. List 2 examples each of an epithelial and mesenchymal tumor (5)
(3+2 = 5 marks)
- 3B) Describe the pathogenesis of septic shock (5)

4) Write a short note on:

- 4A) Thrombocytopenia (5)
- 4B) Sickle cell anemia (5)

5) In a tabular format differentiate the following terms with suitable examples

- 5A) Hyperplasia and hypertrophy (2)
- 5B) Metaplasia and dysplasia (2)
- 5C) Granuloma and granulation tissue (2)
- 5D) Thrombosis and embolism (2)
- 5E) Coagulative and liquefactive necrosis (2)

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Question Paper

Exam Date & Time: 22-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION-JUNE 2024
SUBJECT: PTH2101- BIOMECHANICS
(SCHEME 2020)

Marks: 100

Duration: 180 mins.

Answer all the questions.

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| 1) | Explain the kinematics of the hip joint. Calculate the joint reaction force of the weight bearing hip joint on unilateral stance in a person who weighs 90 kilograms
(10+10 = 20 marks) | (20) |
| 2) | Explain in detail the kinetics and kinematics of the tibiofemoral joint | (20) |
| 3) | Explain fixed support synergies | (10) |
| 4) | Explain in detail about scapulohumeral rhythm | (10) |
| 5A) | Explain pump handle motion of the thorax | (5) |
| 5B) | Mention the static and dynamic stabilizers of the shoulder | (5) |
| 5C) | Explain in detail the components of power grip | (5) |
| 5D) | Explain Q angle | (5) |
| 5E) | Explain the temporal variables of motion | (5) |
| 5F) | Name ANY FOUR spinal ligaments and mention its function | (5) |
| 6A) | What is normal lumbosacral angle? | (2) |
| 6B) | What is nutation? | (2) |
| 6C) | What is cubitus valgus? | (2) |
| 6D) | What is positive ulnar variance? | (2) |
| 6E) | Name the lateral ligaments of the ankle | (2) |

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