

Question Paper

Exam Date & Time: 15-Jan-2021 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BPT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BPT 201 - BIOMECHANICS
(2016 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Describe in detail the anatomy of the shoulder joint and the structures surrounding it. Explain the kinetics and kinematics of shoulder abduction. (20)
(10+10 = 20 marks)
- 2) What is the concave convex rule? Explain its application in joint mobilization with suitable detailed examples. (20)
(10+10 = 20 marks)
- 3) What are the various orders of levers? Explain each lever with a suitable example of that found in the body. (10)
(4+6 = 10 marks)
- 4) Explain how using a cane affects the transmission of forces through the hip joint. (10)
- 5A) Briefly explain the lumbo-pelvic rhythm. (5)
- 5B) Describe in brief the various movements of the thorax that help in respiration. (5)
- 5C) Differentiate between passive and active insufficiency with a suitable example. (5)
(3+2 = 5 marks)
- 5D) Neatly draw and label the structure of the intervertebral disc and mention its functions. (5)
(3+2 = 5 marks)
- 5E) Name and explain in brief the determinants of gait. (5)
- 5F) Explain in brief the locking and unlocking mechanism of the knee. (5)
- 6A) What are ground reaction forces? (2)
- 6B) Mention any TWO postural abnormalities of the spine. (2)
- 6C) Name any TWO anti-gravity muscles. (2)
- 6D) Give ONE example of a synovial saddle joint. (2)
- 6E) Name the abnormal gait pattern observed with bilateral hip abductor weakness. (2)

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Question Paper

Exam Date & Time: 18-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./ BPT/ B.Sc. M.R.T./B.Sc. RADIOTHERAPY TECHNOLOGY/ B.Sc. C.V.T./B.Sc.
R.T./B.Sc. M.I.T./B.Sc. RRT&DT/B.Sc. EMT/B.Sc. AOTT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: PATH 201 - PATHOLOGY
(2016/2016 RV/2019 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1A) Define leukaemia. Classify acute leukaemia. Describe the clinical features of acute leukaemia. (6)
(2+2+2 = 6 marks)
- 1B) Describe the blood picture and chromosomal abnormality of chronic myeloid leukaemia. (4)
- 2A) Compare the two major types of diabetes mellitus. (5)
- 2B) Define shock. Explain the pathogenesis of septic shock. (5)
(2+3 = 5 marks)
- 3A) Explain the vascular and cellular changes in acute inflammation. (5)
- 3B) Describe the etiology, modes of infection and clinical features of viral hepatitis. (5)
- 3C) Explain the process of fracture healing with factors influencing the healing. (5)
- 3D) Describe the types and morphology of tuberculosis. (5)

4. Write briefly on:

- 4A) Predisposing factors of atherosclerosis. (2)
- 4B) Cerebrovascular diseases. (2)
- 4C) Klinefelter's syndrome. (2)
- 4D) Carcinogenesis with suitable examples. (2)
- 4E) Clinical features of renal failure. (2)

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Question Paper

Exam Date & Time: 20-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./BPT/ B.Sc. C.V.T./B.Sc. R.T./ B.Sc. M.I.T./B.Sc. RRT&DT/B.Sc. EMT/B.Sc. AOTT
DEGREE EXAMINATION -
JANUARY 2021
SUBJECT: MICR 201 - MICROBIOLOGY
(2016/2019 SCHEME)

Answer all the questions.
Draw diagrams wherever necessary.

Marks: 50

Duration: 120 mins.

- 1) Define and classify hypersensitivity reactions. Write in detail about type I hypersensitivity reaction. (10)
(1+2+7 = 10 marks)
- 2) Describe in detail the pathogenesis and prophylaxis of poliomyelitis. (10)
(5+5 = 10 marks)

3. Write short notes on:

- 3A) Bacterial flagella (5)
- 3B) Laboratory diagnosis of enteric fever. (5)
- 3C) Autoclave (5)
- 3D) ELISA (5)

4. Write short notes on:

- 4A) Define plasmids. Mention two properties of plasmids. (2)
- 4B) Two contributions of Robert Koch. (2)
- 4C) Two staining methods for *Mycobacterium tuberculosis*. (2)
- 4D) Draw a neat labelled diagram of trophozoite and cyst forms of *Entamoeba histolytica*. (2)
- 4E) Classify fungi according to morphology with one example each. (2)

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Question Paper

Exam Date & Time: 22-Jan-2021 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BPT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BPT 203 - EXERCISE THERAPY - I
(2016 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Define mobilization. Discuss the indications and contraindications of joint mobilization. Add a note on grades of mobilization. (20)
(2+8+10 = 20 marks)
- 2) What is spinal traction. What are its indications and contraindications? Write a note on the effects of spinal traction. (20)
(2+8+10 = 20 marks)
- 3) Explain Oxford protocol for strengthening. Discuss in detail the precautions for strength training. (10)
- 4) What is stretching. What are the different modes of stretching? (10)

5. Write Short Answers :

- 5A) Describe the principles of stretching. (5)
- 5B) Describe the principles of progressive resistive exercise. (5)
- 5C) What is circuit weight training? (5)
- 5D) Discuss the effects of joint mobilization. (5)
- 5E) Explain the Hold-relax technique with an example. (5)
- 5F) Describe the grades of Manual Muscle Testing. (5)

6. Write Brief Answers:

- 6A) Name the modes of application of spinal traction? (2)
- 6B) Mention the limitations of Manual Muscle Testing. (2)
- 6C) What is selective stretching? (2)
- 6D) What are trick movements? (2)
- 6E) Mention ANY FOUR contraindications for stretching. (2)

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Question Paper

Exam Date & Time: 25-Jan-2021 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER BPT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BPT 205 - ELECTROTHERAPY - II
(2016 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the physiological effects of ultrasound. Add a note on contraindications and dangers of ultrasound. (20)
(10+5+5 = 20 marks)
- 2) Explain the two methods of application of short wave diathermy. Explain with diagrams the tissue heating patterns when using capacitor method of shortwave diathermy. (20)
(10+10 = 20 marks)
- 3) Define iontophoresis. Discuss ANY FOUR negative and ANY FOUR positive charged ions and their uses. (10)
(2+4+4 = 10 marks)
- 4) Enumerate the types of LASER. Explain in detail the physiological and therapeutic effects of LASER therapy. (10)
(2+4+4 = 10 marks)

5. Short Notes:

- 5A) Discuss the therapeutic effects and uses of constant direct current. (5)
- 5B) Explain the properties of high frequency currents. (5)
- 5C) Discuss the physiological effects of pulsed short wave diathermy. (5)
- 5D) Discuss the dosage in ultrasound. (5)
- 5E) Discuss the dangers and contraindications of UVR. (5)
- 5F) List the indications for extracorporeal shock wave therapy. (5)

6. Brief Notes:

- 6A) What is Phonophoresis? (2)
- 6B) Enlist the properties of LASER. (2)
- 6C) Mention ANY TWO uses of nerve conduction studies. (2)
- 6D) What is anelectrotonus? (2)
- 6E) Define combination therapy. (2)

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