

Question Paper

Exam Date & Time: 02-Sep-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. (EXERCISE AND SPORTS SCIENCES) DEGREE EXAMINATION - SEPTEMBER 2022
SUBJECT: ESS2201 - EXERCISE PHYSIOLOGY
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Discuss the responses of the cardiovascular system to aerobic and resistance exercise. Explain the adaptations of the cardiovascular system to aerobic exercise. (20)
(10+10 = 20 marks)
- 2) Explain the process of thermoregulation in our body with diagram. Discuss the heat disorders. (20)
(10+10 = 20 marks)
- 3) Discuss the responses of the respiratory system to aerobic exercise. (10)
- 4) Discuss the physiological responses to acute altitude exposure. (10)
- 5A) Explain the effect of exercise on the renal system. (5)
- 5B) Briefly discuss how glucose metabolism is regulated by endocrine system during exercise? (5)
- 5C) Describe electron transport chain with diagram. (5)
- 5D) Explain the adaptations of the neuromuscular system to resistance exercise. (5)
- 5E) Write a short note on EPOC. (5)
- 5F) Write a short note on effects of exercise on immune system. (5)
- 6A) Write 2 ill effects of hyperbaric condition. (2)
- 6B) What is size principle? (2)
- 6C) What is respiratory alkalosis? (2)
- 6D) List four banned substances. (2)
- 6E) What is the fate of pyruvate without oxygen? (2)

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Question Paper

Exam Date & Time: 03-Sep-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EXERCISE AND SPORTS SCIENCES DEGREE EXAMINATION - SEPTEMBER 2022
SUBJECT: ESS2202 - ESSENTIALS OF FITNESS TRAINING
(2020 SCHEME)

Answer ALL questions.

Marks: 100

Duration: 180 mins.

- 1) What are the common errors in sprinting and recommend corrective strategies for the same? (20)
- 2) What is muscular endurance? Explain briefly about the tests for measuring muscular endurance. (20)
- 3) Discuss about the safety precautions and different techniques for plyometric training. (10)
- 4) Discuss the types of aerobic training. (10)
- 5A) Write about lifestyle modification for a sedentary individual and how it is beneficial. (5)
- 5B) What are the principles of resistance exercises? (5)
- 5C) Write a brief note on fitness fatigue theory. (5)
- 5D) Write about the risk factors and stratification during pre-participation screening. (5)
- 5E) Write the procedure of Earl's protocol for measuring 1 RM. (5)
- 5F) Write about the phases of new facility design. (5)
- 6A) What is cross training? (2)
- 6B) What is the theory of super compensation? (2)
- 6C) Name the modes of providing sprint resistance. (2)
- 6D) What is periodization? (2)
- 6E) What is post activation potentiation? (2)

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Question Paper

Exam Date & Time: 05-Sep-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EXERCISE AND SPORTS SCIENCES DEGREE EXAMINATION - SEPTEMBER 2022
SUBJECT: ESS2242 - SPORTS INSTRUMENTATION AND TECHNOLOGY
(PROGRAM ELECTIVE - I)
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

Essay Questions:

- 1) What is Time Motion Analysis? Describe the methods used for time motion analysis in sports. (10)
(2+8 = 10 marks)
- 2) Explain the use and application of lower body positive pressure treadmill in sport. (10)

3. Short Notes:

- 3A) How many X-ray beams are used in DEXA? What are their purposes? (5)
- 3B) Draw and label the parts of isokinetic dynamometer. (5)
- 3C) What are the advantages of a metabolic cart for an exercise physiologist? (5)
- 3D) Explain the role of Fitlight in enhancing agility and speed in different sports. (5)

4. Brief Notes:

- 4A) What is DRS in formula 1? (2)
- 4B) List the types of ergometers. (2)
- 4C) What are the methods employed to record core temperature in sports? (2)
- 4D) Write Any TWO applications of EMG in sports. (2)
- 4E) Which of the cognitive domains do the Stroop test and N-back test measure? (2)

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