Question Paper

Exam Date & Time: 29-May-2024 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EXERCISE AND SPORTS SCIENCES DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: ESS2201 - EXERCISE PHYSIOLOGY
(2020 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	Explain the neuromuscular responses and adaptations to aerobic and resistance exercise training.	(20)
2)	Explain the Cardiovascular adaptations to different types of exercises. With a flowchart and specific points, describe the Respiratory responses to exercise. (10+10 = 20 marks)	(20)
3)	Explain the physiological effects of aerobic exercises specifically on: (a) Heart Rate (b) Cardiac Output (c) Aerobic Capacity (d) Stroke Volume (e) Peripheral Vascular Resistance.	(10)
4)	Explain the role of exercise in regulation of mineralocorticoids.	(10)
5A)	Write a short note on deep sea physiological changes and challenges experienced by divers and swimmers.	(5)
5B)	Write about the Cardiovascular drift using a detailed flowchart.	(5)
5C)	Write a note on cold acclimatization and effect on sports performance.	(5)
5D)	Outline the genes and its importance in the regulation of muscle strength and hypertrophy.	(5)
5E)	What is the role of exercise physiologist in performance enhancement?	(5)
5F)	What is the "Frank Sterling Mechanism"? Mention any three main causes that might gradually lead to cardiac death in athletes. (2+3 = 5 marks)	(5)
6A)	Write about the "Athlete's heart"?	(2)
6B)	Write about the Hypoxia inducible factor (HIF-1) signaling.	(2)
6C)	What is the effect of increased pH on Oxyhemoglobin dissociation curve?	(2)
6D)	What is respiratory alkalosis?	(2)
6E)	List 4 banned substances in Sports.	(2)

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Question Paper

Exam Date & Time: 31-May-2024 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EXERCISE AND SPORTS SCIENCES DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: ESS2202 - ESSENTIALS OF FITNESS TRAINING
(2020 SCHEME)

Marks: 100 **Duration: 180 mins.**

Answer all the questions.

1)	What is muscular endurance? Explain briefly about the tests for measuring muscular endurance.	(20)
2)	Discuss in detail the types of aerobic training and enlist the training modes for the same.	(20)
3)	Write about any five methods for testing body composition.	(10)
4)	Discuss about the safety precautions and different techniques for plyometric training.	(10)
5A)	What are the goals of pre-participation screening?	(5)
5B)	Write about lifestyle modification for a sedentary individual and it's benefits.	(5)
5C)	Write a brief note on fitness fatigue theory of training.	(5)
5D)	Write about the different methods adapted for warm-up.	(5)
5E)	Write about the phases of new facility design.	(5)
5F)	Write about post activation potentiation.	(5)
6A)	What is cross training?	(2)
6B)	What are the criteria for a good mission statement of new facility?	(2)
6C)	What is Speed, Agility and Quickness?	(2)
6D)	What are the types of grips used in free weight exercises?	(2)
6E)	What is superset training?	(2)

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Question Paper

Exam Date & Time: 01-Jun-2024 (10:00 AM - 12:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EXERCISE AND SPORTS SCIENCES DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: ESS2242 - PROGAM ELECTIVE - I : SPORT INSTRUMENTATION AND TECHNOLOGY
(2020 SCHEME)

Marks: 50 **Duration: 120 mins.**

Answer all the questions.

1)	Write in detail about the role of the following equipment: a) Heart rate monitor b) Hydrostatic weighing c) Temperature Probe Mention their Function in Sports, Advantage, Disadvantage (4+6 = 10 marks)	(10)
2)	Describe the parts of a force plate system. Explain the application of force plate in sports science. (5+5 = 10 marks)	(10)
3A)	Explain the use of hydrotherapy in sport.	(5)
3B)	Describe and explain the 3 common components of the IMUs.	(5)
3C)	Explain the different cognitive tests available for testing the cognitive domains.	(5)
3D)	Write about the application of an ergometer in the field of sport.	(5)
4A)	Write any 2 applications of EMG in sports.	(2)
4B)	Which athletes would benefit from training in a hypoxic chamber?	(2)
4C)	What are the seven sites of skinfold measurement?	(2)
4D)	Differentiate force platform from a pressure mat.	(2)
4E)	What is gaze tracking?	(2)

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