

Curriculum

DNB Broad Specialty



Physiology

- ◆ Programme Goal and Objectives
- ◆ Syllabus
- ◆ Recommended Text Books and Journals

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I. PROGRAMME GOAL AND OBJECTIVES:

1. Programme Goal

The postgraduate course in the subject of Physiology should enable a medical graduate to be

- A competent Physiologist
- A good medical teacher in Physiology practicing the required skills of teaching

2. Programme Objectives

At the end of the course a Postgraduate student in Physiology should be able to:

- Demonstrate comprehensive knowledge and understanding of general and systemic physiology.
- Comprehend and understand physiological basis of health and disease affecting various organs systems.
- Select and use appropriate teaching techniques and resources.
- Critically evaluate published journal literature and to effectively use the library facilities including computer, CD ROM and satellite search.
- Carry out relevant research.
- Function as an effective member of a teaching team or research team.
- Carry out professional obligations ethically and keeping in view the national health policy.

II. SYLLABUS:

1. Primary (Part-I)

Paper I be titled as “General Physiology including history of Physiology”

Final (Part II) Paper III “Systemic Physiology (iii) including recent advances.

2. Under the Head of Syllabus (Part I) against Paper I at the end add –“History of Physiology”.

3. Against Paper II at the end add “Comparative Physiology”

4. Under the Caption Part II Final: against Paper II add “E titled “Behavioral Physiology with Yoga, Meditation”

5. Practical Training

Animal Experiment

i. Amphibian

- Free load and after load.
- Effect of continuous repeated stimulation (study of phenomena of Fatigue).
- Length of tension diagrams.
- Properties of cardiac muscle – Long refractory period, All or None Law.
- Extrasystole and compensatory pause, Beneficial effect.
- Regulation of Heart, Vagus dissection and effect of vagal stimulation.
- Actions of acetyl chloride, adrenaline and nicotine on heart.
- Perfusion of isolated frogs heart-role of sodium, potassium, calcium ions.

ii. Mammalian

- General management of Mammalian experiments.
- Recording of Blood pressure and respiration on dogs and also the effects of various factors.
- Recording of effect of stimulation of vagus nerve on blood pressure and respiration in the dog.
- Stimulation of central and peripheral end of vagus on arterial pressure after vagotomy.
- Effect of drug-adrenaline and acetylcholine on blood pressure and respiration in the dog.
- Intestinal movement and tone.
- Effect of adrenaline on intestinal movement and tone.
- Occlusion of carotid arteries on blood pressure and respiration.
- Stimulation of splanchnic nerve (distal end) on arterial pressure.

Human Physiology**i. Clinical Physiology**

- Elementary principles of clinical examination.
- Methods of Inspection/Palpation/Percussion/auscultation.
- Plan of conduction and scheme of recording.
- General examination.

ii. Cardiovascular system

- Clinical examination of circulatory system.
- Examination of pulse, blood vessels and measurements of blood pressure.

iii. Respiratory system

- Clinical examination of respiratory system.

iv. Abdominal system

- Clinical examination of Abdomen.

v. Central Nervous system

- Clinical examination of the nervous system and its physiological basis.
- Examination of higher mental functions.
- Clinical examinations of the special senses including cranial nerves.
- Tests of Hearing and Deafness.
- Motor functions.
- Reflex functions.
- Sensory functions.

vi. Ophthalmology

- Clinical examination of the eye and papillary reflex.
- Visual acuity.
- Perimetry.
- Accommodation.
- Color vision and color blindness.
- Fundoscopy.

Laboratory Procedures

i. Haematology

- Haemocytometry.
- Determination of reticulocyte count, platelet count WBC count, RBC count, Eosionphill count in normal and diseased state.
- Differential count of WBC.
- Blood grouping and Cross matching.
- Determination of Beeding time and Clotting time.
- Haemolysis and Fragility tests.

ii. Cardiovasuclar system

- Electrocardiography – ECG and its interpretation.

iii. Respiratory system

- Spirometry
- Assessment of ventilator functions.
- Alveolar air, breath holding and endurance tests.
- Recording of lung functions tests by computerized or electronic spirometer.
- Sthethography.

iv. Reproductive system

- Methods to determine ovulation time by Basal body temperature chart, cervical smear and vaginal smear.

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- Pregnancy diagnostic tests Immunological test.
 - Sperm count.
 - v. **Nerve muscle physiology**
 - Ergography
 - Recording of EMG – nerve conduction both sensory and motor.
 - vi. **Others**
 - Construction of dietary chart for growing children, hyper tensive patients, Diabetic mellitus patients.
 - Test for physical fitness
 - Lab Harvard step test.
 - Bicycle Ergometry
 - Treadmill protocols leading to determination of VO_2 max.
 - Cardio respiratory response to whole body exercise.

Clinical Biochemistry

- i. Estimation of normal and abnormal constituents of urine.
- ii. Estimation of Blood sugar.
- iii. Estimation of Serum calcium
- iv. Kidney function test.
- v. Liver function test.
- vi. Gastric function tests (excluding fractional test meal).
- vii. Glucose tolerance test

III. RECOMMENDED TEXT BOOKS AND JOURNALS

Under the caption recommending reading the following be added:

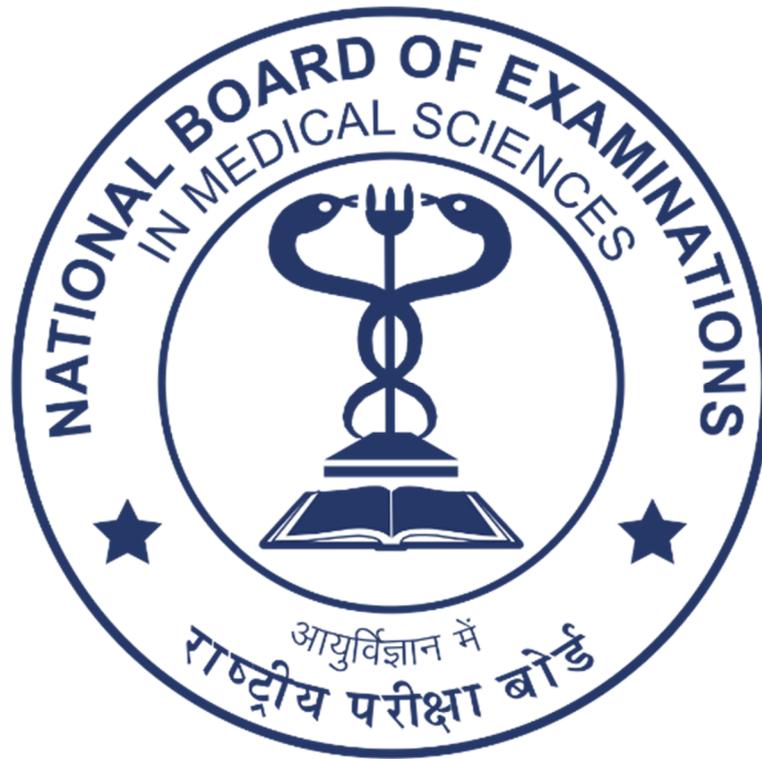
1. TEXT BOOKS

- Keele, Samson and Wright's Applied Physiology.
- Best and Taylor – Physiological basis for medical practice.
- Guyton – Text book of Medical Physiology.
- Ganong – Review of Medical Physiology.
- Cambeell, Clinical Physiology.
- P F Backer – Recent advances in Physiology.
- Vernon – B Mount Castle, Medical Physiology Vol I and II.
- Carl J wiggers – Physiology in Health and Disease.
- Williams Text of Endocrinology.
- West and Todd Text Book of Biochemistry and Physiology.
- Harper's Biochemistry.
- Duncon – Disease of Metabolism.

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- John Field H W Magou – Hand Book of Neuro Physiology.
 - Carpenter, Neurophysiology
 - Wallance O Fen Handbook of Respiratory Physiology.
 - Prosser – Experimental Physiology.
 - Prosser – Comparative Animal Physiology, Mannual.
 - Wintrobe’s – Clinical Haematology.
 - Kelmen – Applied Cardiovascular Physiology.
 - Brown, Cell signaling, Biology and Medicine of Signal transudation.
 - Byrne – Introduction of Memberane Transport and Bioelectricity.
 - Sudarasky – Patho physiology of the nervous system.

2. JOURNALS:

- By American Physiological Society – Journal of Applied Physiology, Physiological Reviews, Annual Review of Physiology, Advances in Physiological Education and Recent advances in Physiology.
- British Publication – Journal of Physiology.
- Association of Physiologist and Pharmacologists of India – Indian Journal of Physiologists.
- Indian Counsil of Medical Research – Indian Journal of Medical Research.



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड
स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार
मेडिकल एन्क्लेव, अंसारी नगर, नई दिल्ली – 110029

NATIONAL BOARD OF EXAMINATIONS IN MEDICAL SCIENCES
Ministry of Health & Family Welfare, Govt. of India
Medical Enclave, Ansari Nagar, New Delhi- 110029