PACIFIC MEDICAL UNIVERSITY, UDAIPUR

Ph.D. Entrance Syllabus –Anaesthesiology

Ph.D. Entrance Syllabus in Anaesthesiology

1. Basic Sciences Related to Anaesthesiology

These topics form the core scientific foundation and are usually tested in most Entrance Tests:

Anatomy

- Cardiovascular system anatomy
- Respiratory system & airway anatomy
- Central, autonomic nervous system
- Regional and operative anatomy relevant to anesthesia practice

Physiology

- Cardiovascular physiology
- Respiratory physiology
- Neuromuscular junction and nervous system functions

Biochemistry

- Fluid & electrolyte balance
- Organ function tests (LFT, KFT)
- Enzyme systems & basic metabolic principles

Pharmacology

- General principles: pharmacokinetics, pharmacodynamics
- Anesthetic agents: intravenous, inhalational
- Neuromuscular blockers & local anesthetics
- Drug interactions in anesthesia

Medical Physics in Anaesthesia

- Anesthesia machine & components
- Monitoring devices
- Basic principles of measurement & gas laws

History & Principles

- History/development of anesthesia as a discipline
- Hazards, safety, perioperative monitoring basics

Research Methodology

- Fundamentals of research design
- Clinical trials & evidence-based medicine basics
- Biostatistics essentials

2. Clinical Anaesthesiology Theory & Practice

This section focuses on clinical competence and understanding:

Anesthesia Techniques

- General anesthesia
- Regional & neuraxial blockade (spinal, epidural)
- Pediatric anesthesia concepts

Perioperative Management

- Pre-operative evaluation
- Intraoperative anesthesia care
- Post-operative & pain management

Airway Management

- Difficult airway assessment and management
- Tools & strategies for airway safety

Resuscitation

- Basic Life Support (BLS)
- Advanced Cardiovascular Life Support (ACLS)

Complications & Emergency Management

- Anesthesia-related emergencies
- Handling critical situations & troubleshooting