

**The European Diploma in  
Anaesthesiology and Intensive Care**

**Diploma Guide**

## **CONTENTS**

|   |           |
|---|-----------|
| <b>1. INTRODUCTION: OBJECTIVES AND STRUCTURE.....</b> | <b>3</b>  |
| <b>2. PRIVILEGES FOR DIPLOMATES.....</b>              | <b>5</b>  |
| <b>3. THE EXAMINATION REGULATIONS .....</b>           | <b>6</b>  |
| <b>4. CRITERIA FOR ENTRY .....</b>                    | <b>7</b>  |
| <b>5. GUIDE TO CANDIDATES.....</b>                    | <b>8</b>  |
| <b>6. MCQ INSTRUCTIONS.....</b>                       | <b>10</b> |
| <b>7. SAMPLE MULTIPLE CHOICE QUESTIONS.....</b>       | <b>11</b> |
| <b>8. SPECIMEN CANDIDATE REPORT FORM.....</b>         | <b>12</b> |

# **1. INTRODUCTION: OBJECTIVES AND STRUCTURE**

## **OBJECTIVES OF THE EXAMINATION**

### **Testing of knowledge**

The primary object of any examination is to find out whether the examination candidate has acquired the necessary breadth and depth of knowledge, as judged by the examiners. The examination standard, therefore, is set by the examiners who act as the agents of the diploma-granting body - in this case the European Society of Anaesthesiology. The aim is to achieve a uniformly high standard of knowledge by anaesthesiologists throughout Europe. Possession of the Diploma in Anaesthesiology and Intensive Care demonstrates that the owner has a high level of knowledge as judged by the Board of Examiners.

### **Effect on training programmes**

The existence of a supra-national examination in anaesthesiology provides an incentive for the development of departmental, university, national and European training programmes. The examination is a target for which anaesthetic trainees can prepare and this has a beneficial effect on both learning and teaching. Thus a demand is created for training programmes including relevant books and journals, dedicated lecture courses and examination-orientated tutorials. The inclusion of the basic medical sciences in both parts of the diploma examination helps to ensure that this essential ingredient in anaesthetic training is not neglected. Moreover, an examination target covering both basic science and the clinical subjects helps to ensure that trainees obtain a broad-based training and do not succumb to the temptation of indulging in highly specialised research work before their training is complete.

### **Effect on promotion**

One of the problems confronting heads of departments of anaesthesiology is in judging the competence, knowledge and skill of the various departmental trainees with a view to promotion to higher grades. The existence of a two-part diploma examination can be very useful in helping to solve this problem. The Part I can act as a 'promotional hurdle' for movement from one grade to another and the Part II, which cannot be taken until the candidate has a specialist status in a European country, can act as the mark of the especially high-ranking candidate.

### **Evaluation of foreign medical graduates**

The aim of the European Union of facilitating movement of individuals throughout the EU countries often presents problems to potential medical employers. These problems are not, of course, confined to the EU countries. How does the potential employer in one country assess the competence of an applicant for a post from another country which may have very different training programmes? The existence of a European diploma goes a long way towards solving this problem and possession of the EDA (European Diploma in Anaesthesiology) provides evidence of a high standard of training.

### **Competition for permanent posts**

It is clear that there is a surplus of doctors in some parts of Europe and a number of countries are now suffering from a surplus of anaesthesiologists. The result, for the anaesthesiologist seeking a permanent high quality post, is that the competition is getting more intense. Those applicants who succeed, rely heavily on evidence of a first-class training. The possession of the EDA can be expected to influence selection committees since it demonstrates that the applicant has been judged by an independent Board of Examiners as a fully trained anaesthesiologist.

### **Mutual recognition of other diploma examinations**

Postgraduate diploma examinations in anaesthesiology exist in several other countries around the world. It is the aim of the European Society of Anaesthesiology to gain mutual recognition with those examinations. Thus holders of the EDA can gain exemption from the Primary examinations of both the Royal College of Anaesthetists and the College of Anaesthetists of the Royal College of Surgeons in Ireland. Equally, Fellows of either of these organisations can gain exemption from Part I of the European Diploma in Anaesthesiology and Intensive Care.

## **STRUCTURE OF THE EXAMINATION**

The examination is a multilingual, end-of-training, two-part examination covering the relevant basic sciences and clinical subjects appropriate for a specialist anaesthesiologist.

### **Part I**

- a) The examination is held annually in late September or early October simultaneously in several centres and different languages as listed in the annual examination calendar.
- b) The Part I examination comprises two multiple choice question (MCQ) papers. Each paper has sixty questions and is of two hours duration. The MCQ format adopted is that of a stem with five responses, each of which may be either true or false. Instructions to candidates on how to answer the MCQ's can be found on page 10 followed by some sample questions and their answers.
- c) Paper I concentrates on the basic sciences and Paper II comprises questions on internal and emergency medicine, clinical anaesthesia and intensive care medicine. Further details on the subjects covered are given in the 'Guide to Candidates' (page 8). The candidate enters his/her responses on answer sheets which are computer marked. The marking method is that each correct response earns one positive mark. Each incorrect response carries no mark. Each blank response carries no mark. The computer assessment produced is then analysed by the Examination Committee. After the Exam MCQ booklets and answer sheets may be made available for review under monitored conditions to candidates who have failed the Part I examination from countries where it is mandatory.
- d) In deciding the pass marks for the two multiple choice question papers, the Examination Committee takes into account two important variables:
  - i. The use of new and altered MCQ's each year can potentially result in slight variations in the standard of the papers. This may result in higher or lower marks being achieved as a result of the standard of the paper rather than variation in the quality of the candidates.
  - ii. The actual standard of those entering the examination may also vary between years. It would be wrong to fail one candidate simply as a result of comparison with others in a particularly strong year when he/she might have appeared comparatively better in a weaker group of candidates at another time.

Because of these variables the pass mark varies slightly year on year depending on both the standard of the paper and the performance of candidates on reference or discriminator questions.
- e) Computer assessment of individual parts of every question and also of the question as a whole produces indices both of facility and difficulty. This allows direct comparisons to be made between the performance of good and bad candidates in a particular year. In addition, the judicious use of discriminator questions which have been set in previous papers allows comparison between the performance of different groups of candidates in different years. This, combined with an analysis of the distribution of the marks achieved, is utilised by the Examination Committee in determining the pass mark in relation to the standard achieved in that particular sitting of the examination in comparison to that in previous years.
- f) In order to provide some "feedback" information, both successful and unsuccessful candidates are provided with a Candidate Report of which a specimen is shown on page 12. From this, candidates can see how well or badly they have performed in each paper of the examination and in various subject areas. This information can be of particular value to those who have failed the examination and wish to prepare themselves to re-sit. It should be noted that pass/fail marks are evaluated on the paper as a whole and both papers must be passed in order to pass the Part I examination.

## **Part II**

- a) The Part II examinations are held annually between March and September in several centres and different languages as listed in the examination calendar.
- b) The examination of each candidate is held in a single day during which there are four separate 25-minute oral examinations. In each of these, the candidate is examined by a pair of examiners (each of different nationality), thereby meeting eight examiners in all. As far as possible, candidates are not examined by examiners to whom they are known.
- c) The oral examination embraces the same range of basic science and clinical subjects as is covered by the Part I.
- d) In the oral examinations, 'Guided Questions' are used in which candidates will be given a brief written presentation 10 minutes before meeting the examiners. The subsequent examination will then begin by concentrating on the problems arising from the presentation. Two of the oral examinations will concentrate on the basic sciences and two on clinical topics. In the clinical orals, x-rays and ECG's are also used.
- e) Part II examiners use a marking system which is divided into four grades. The grades are 'good pass', 'pass', 'narrow fail' and 'bad fail'. Since there are four separate oral examinations the candidate obtains four marks. The candidate should obtain at least three 'pass' to pass the examination. Candidates who obtain two or more 'narrow fails' or who obtain one or more 'bad fails', fail the examination. It is therefore, most important that candidates should try to achieve a consistent and broad range of knowledge, rather than become experts in narrow fields.
- f) At the end of each day, the examiners meet and the marks are declared and reviewed. Until this time, no examiner knows how the candidate has fared in other parts of the examination. Following this meeting, the results are handed to the candidates.
- g) Successful candidates are invited to attend the Awards Ceremony of the Annual Meeting of the Society where the Diplomas are presented. Candidates unable to receive their Diplomas in person may receive them by post.

## **2. PRIVILEGES FOR DIPLOMATES**

- 1. Diplomates shall be known as "Diplomates of the European Society of Anaesthesiology" (D.E.S.A.)
- 2. New Diplomates who choose to attend the Annual Meeting to receive their diploma are entitled to a reduced registration fee for the Meeting.
- 3. Naturally, it is hoped that new Diplomates will become Members of the Society and contribute to the achievement of the Society's aims and objectives.

### **3. THE EXAMINATION REGULATIONS**

1. The structure of the examination is described on page 4 and 5.
2. The diploma may be granted to those who have passed both the Part I and the Part II examinations and who have complied with all the regulations.
3. The fees payable for admission to each Part and the dates of examination are available on the ESA website <http://www.euroanesthesia.org> . All enquiries should be addressed to:

**EDA Examinations Administrator**  
**European Society of Anaesthesiology**  
**Rue des Comédiens 24**  
**1000 Brussels**  
**Belgium**  
**Tel: +32 (0)2 743 32 99**  
**Fax: +32 (0)2 743 32 98**  
[exam@euroanesthesia.org](mailto:exam@euroanesthesia.org)

4. Applications for admission to the examination must reach the Examinations Administrator not later than the dates shown in the Examination Calendar.
5. Applications for admission to an examination must be accompanied at first entry by the required certificates and the full amount of the fee payable.
6. A candidate who may desire to make representations with regard to the conduct of his/her examination must address them to the Examinations Administrator and not, in any circumstances, to an Examiner.
7. The Examination Committee may refuse to admit to an examination, or to proceed with the examination of any candidate who infringes any of the regulations, or who is considered by the Examiners to be guilty of behaviour prejudicial to the proper management and conduct of the examination.
8. The Completion Fee must be paid before successful Part II candidates can be ratified as Diplomates and before the Diploma is granted. This fee is shown on the ESA website.

#### **4. CRITERIA FOR ENTRY**

Candidates will be admitted to the **Part I Examination** provided they possess a primary medical qualification accepted for registration in one or more of the European countries (as shown on the list below).

Candidates will be admitted to the **Part II Examination** provided that they:

- a) have passed the Part I examination **AND**
- b) have been on a national medical register and in active medical practice for six years since the completion of primary graduation, or five years since the completion of their intern year **AND**
- c) have completed four years in the whole-time practice of clinical anaesthesia which may or may not have included intensive therapy **AND**
- d) are registered as a specialist anaesthesiologist (or will be within the same calendar year as that in which they are sitting the Part II examination) in one of the European countries (as shown on the list below). Please note that we cannot award the diploma unless and until we see written evidence of actual specialist registration. It is therefore essential that candidates are sure, and can provide written confirmation, that they can meet these criteria before applying for the Part II examination.

#### **NOTES**

- Years may be calculated up to the end of the year in which the examination is held.
- **UK** and **Irish** trained candidates must obtain from the Royal College of Anaesthetists a projected date for the award of their Certificate of Completion of Specialist Training (CCST) and will be eligible for admission to the Part II examination in the year in which this falls. **UK** and **Irish** trained candidates who do not have a specialist registrar post (SpR) (and, therefore, will not have a CCST date) will **not** be eligible to sit the Part II examination unless they have completed the prescribed training in one of the other European countries listed below.

***This advice is offered to prevent candidates entering for the Part I (MCQ) and subsequently discovering that they are ineligible for the Part II (oral). The Part II Entry Criteria should be studied with care in the light of the Notes shown above.***

| <b>LIST OF EUROPEAN COUNTRIES</b> |                |                        |                    |            |
|-----------------------------------|----------------|------------------------|--------------------|------------|
| Albania                           | Andorra        | Armenia                | Austria            | Azerbaijan |
| Belarus                           | Belgium        | Bosnia and Herzegovina | Bulgaria           | Croatia    |
| Cyprus                            | Czech Republic | Denmark                | Estonia            | Finland    |
| France                            | Georgia        | Germany                | Greece             | Hungary    |
| Iceland                           | Ireland        | Israel                 | Italy              | Kazakhstan |
| Kyrgyzstan                        | Latvia         | Lithuania              | Luxembourg         | Macedonia  |
| Malta                             | Moldova        | Monaco                 | Netherlands        | Norway     |
| Poland                            | Portugal       | Romania                | Russian Federation | San Marino |
| Serbia and Montenegro             | Slovakia       | Slovenia               | Spain              | Sweden     |
| Switzerland                       | Tajikistan     | Turkey                 | Turkmenistan       | Ukraine    |
| United Kingdom                    | Uzbekistan     |                        |                    |            |

## **5. GUIDE TO CANDIDATES**

The examination aims to assess a candidate's knowledge of:

### **The basic sciences relevant to anaesthesiology and intensive care as follows:**

- a) Anatomy: The anatomy of the head, neck, thorax, spine and spinal canal. The anatomy of peripheral nervous and vascular systems. Surface markings of relevant structures.
- b) Pharmacology: Basic principles of drug action. Principles of pharmacokinetics and pharmacodynamics, receptor drug interaction, physicochemical properties of drugs and their formulations, drug actions and drug toxicity. Pharmacology of drugs used, especially in anaesthesia and in internal medicine.
- c) Physiology and biochemistry (normal and pathological). Respiratory, cardiovascular and neurophysiology. Renal physiology and endocrinology. Physiological measurement: measurement of physiological variables such as blood pressure, cardiac output, lung function renal function, hepatic function etc.
- d) Physics and principles of measurement. SI system of units. Properties of liquids, gases and vapours. Physical laws governing gases and liquids as applied to anaesthetic equipment such as pressure gauges, pressure regulators, flowmeters, vapourisers and breathing systems. Relevant electricity, optics, spectrophotometry, and temperature measurement together with an understanding of the principles of commonly used anaesthetic and monitoring equipment. Electrical, fire and explosion hazards in the operating room.
- e) Statistics. Basic principles of data handling, probability theory, population distribution and the application of both parametric and non-parametric tests of significance.

### **Clinical Anaesthesiology (including obstetric anaesthesia & analgesia) as follows:**

- a) Preoperative assessment of the patient, their presenting condition and any intercurrent disease. Interpretation of relevant X-rays, EKG'S, lung function tests, cardiac catheterisation data and biochemical results. Use of scoring systems (e.g. ASA gradings).
- b) Techniques of both general and regional anaesthesia, including agents, anaesthetic equipment, monitoring and monitoring equipment; and intravenous infusions. Complications of anaesthesia. Obstetric anaesthesia and analgesia including management of complications related to obstetric anaesthesia and analgesia. Neonatal resuscitation. Special requirements of anaesthesia for other surgical sub-groups such as paediatrics or the elderly; cardiothoracic or neurosurgery.
- c) Postoperative care of the patient including the management of postoperative analgesia.

### **Resuscitation and emergency medicine as follows:**

- a) Cardiopulmonary resuscitation. Techniques of Basic Life Support and Advanced Life Support.
- b) Emergency medicine. Prehospital care. Immediate care of patient with medical or surgical emergency including trauma.

### **Intensive care as follows:**

- a) Diagnosis and principles of management of patients admitted to a general intensive care unit with both acute surgical and medical conditions. Use of assessment and prognostic scoring systems.
- b) Management of circulatory and respiratory insufficiency including artificial ventilation.
- c) Management of infection, sepsis and use of antimicrobial agents.
- d) Management of fluid and electrolyte balance. Administration of crystalloids and colloids including blood and blood products. Parenteral and enteral nutrition.
- e) Management of biochemical disturbances such as acid base imbalance, diabetic keto-acidosis, hyperosmolar syndrome and acute poisoning.
- f) Management of renal failure including dialysis.
- g) Management of acute neurosurgical/neurological conditions.
- h) Management of patients with multiple injury, burns and/or multi-organ failure.
- i) Principles of ethical decision-making.

**Management of chronic pain as follows:**

- a) The physiology of pain.
- b) The range of therapeutic measures available for the management of pain. The psychological management of pain patients. The concept of multidisciplinary care.
- c) The principles of pain and symptom control in terminal care.

**Current literature:**

Candidates will be expected to be conversant with major topics appearing in current medical literature related to anaesthesia, pain relief and intensive care. Whilst national and linguistic differences are recognised, some knowledge is expected on topics of international importance (e.g. new agents) even if they are not in current use in all countries.

**It must be stressed that the foregoing is NOT intended either as an examination syllabus or as a comprehensive list of topics covered by the examination. It is however, a guide which it is hoped will prove useful to candidates preparing for the diploma examination.**

## **6. MCQ INSTRUCTIONS**

### **PART I EXAMINATION**

#### **INSTRUCTIONS TO CANDIDATES**

**PLEASE READ THESE INSTRUCTIONS BEFORE MAKING ANY MARKS ON YOUR ANSWER SHEET. THE ANSWER SHEETS ARE DESIGNED TO BE MACHINE READABLE. USE AN HB PENCIL. IF YOU MAKE A MISTAKE, USE A RUBBER TO ERASE IT. DO NOT USE PEN OR BALL POINT. DO NOT FOLD OR CREASE THE ANSWER SHEET.**

This paper consists of 60 multiple-choice questions in booklet form with a separate **ANSWER SHEET**. Each question has five choices: A, B, C, D and E. Each choice may be true or false. It is possible for all five choices in any question to be all true, all false, or any intermediate combination.

You should decide whether each choice is either true or false, indicating your decision by putting a tick or cross against it in the **QUESTION BOOKLET**.

#### **EXAMPLE:**

1. Thiopental:
- A. is an oxybarbiturate
  - B. is derived from pentobarbital
  - C. is freely soluble in water
  - D. can cause direct myocardial depression
  - E. is contra-indicated in patients suffering from acute intermittant porphyria

When you are satisfied with your decisions, transfer and record your answers by marking the **ANSWER SHEET**. Opposite each question number on the **ANSWER SHEET** are five columns labelled A, B, C, D and E. In each column are two boxes labelled "T" (TRUE) and "F" (FALSE). If you believe a choice to be true, put a line through the box marked "T"; if you believe a choice to be false, put a line through the box marked "F".

For example, if you decide that items B, D and E are true, and that items A and C are false in the question shown above, you would record this by putting a line with your pencil through the appropriate boxes on the **ANSWER SHEET** as shown below.

|   | A  | B  | C  | D  | E  |
|---|--|--|--|--|--|
| 1 | <input type="checkbox"/> T <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> T <input type="checkbox"/> F | <input type="checkbox"/> T <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> T <input type="checkbox"/> F | <input checked="" type="checkbox"/> T <input type="checkbox"/> F |

A positive mark will be awarded for each correct answer. THERE IS NO PENALTY FOR AN INCORRECT ANSWER. No mark will be awarded for an answer left blank.

CANDIDATES SHOULD ANSWER ALL THE QUESTIONS.

Your candidate number has been pre-marked at the top left hand corner of each paper. Please check that it is correct.

**IF YOU DO NOT FOLLOW THESE INSTRUCTIONS,  
THE COMPUTER MAY REJECT YOUR ANSWER PAPER.**

**IMPROPER CONDUCT DURING THE EXAMINATION OR BREACH OF ANY REGULATION DURING  
THE EXAMINATION MAY LEAD TO A CANDIDATE BEING DISQUALIFIED.**

## **7. SAMPLE MULTIPLE CHOICE QUESTIONS**

### **Paper A (Basic Science)**

1. Concerning renal blood flow.
  - A. efferent glomerular arteriolar pressure affects systemic arterial pressure
  - B. renal vasoconstriction is stimulated by a decreased baroreceptor discharge
  - C. arterial hypoxaemia produces an increase in renal blood flow
  - D. renal vasodilation is a dopaminergic response
  - E. glomerular perfusion pressure is controlled by local autoregulatory mechanisms
  
2. Side effects of ganglion blocking drugs include
  - A. intestinal ileus
  - B. atony of the bladder
  - C. postural hypotension
  - D. miosis
  - E. bradycardia

### **Paper B (Clinical Anaesthesiology)**

1. EKG changes associated with hyperkalaemia include
  - A. a prolonged PR interval
  - B. high peaked T waves
  - C. U waves
  - D. ST segment depression
  - E. ventricular extrasystoles
  
2. Bilateral section of the recurrent laryngeal nerves
  - A. causes aphonia
  - B. causes respiratory embarrassment
  - C. causes tetany
  - D. allows adduction of the vocal cords on inspiration
  - E. puts the vocal cords into the cadaveric position

## **ANSWERS TO THE SAMPLE MULTIPLE CHOICE QUESTIONS**

### **Paper A (Basic Science)**

1. T T F T F
2. T T T F F

### **Paper B (Clinical Anaesthesiology)**

1. F T F F T
2. T T F T T

## 8. SPECIMEN CANDIDATE REPORT FORM

### EUROPEAN SOCIETY OF ANAESTHESIOLOGY DIPLOMA CANDIDATE REPORT FORM

Candidate Name:

Candidate No.:

Hospital name:

Country:

| Overall Results |       |       |      |                    |                                   |
|-----------------|-------|-------|------|--------------------|-----------------------------------|
|                 | Right | Wrong | Void | Candidates % Score | Average % score of all candidates |
| <b>Paper A</b>  | 133   | 44    | 123  | 29.7%              | 47.4                              |
| <b>Paper B</b>  | 154   | 37    | 109  | 39.0%              | 53.5%                             |

| Detailed Results             |                    |                                   |
|------------------------------|--------------------|-----------------------------------|
| Paper A                      | Candidates % score | Average % score of all candidates |
| Cardiorespiratory Physiology | 42.6%              | 52.9%                             |
| Neurophysiology              | 26.0%              | 46.0%                             |
| General Physiology           | 37.2%              | 56.7%                             |
| Cardiovascular Pharmacology  | 42.5%              | 55.5%                             |
| CNS Pharmacology             | 32.7%              | 53.0%                             |
| General Pharmacology         | 30.3%              | 49.2%                             |
| General Physics              | 16.7%              | 33.0%                             |
| Clinical Measurement         | 26.2%              | 47.3%                             |
| Statistics                   | 15.0%              | 38.7%                             |
| Paper B                      |                    |                                   |
| Basic Anaesthesia            | 43.3%              | 58.9%                             |
| Special Anaesthesia          | 40.0%              | 54.8%                             |
| Local/Regional Anaesth.      | 22.7%              | 37.4%                             |
| Intensive Care               | 42.7%              | 53.5%                             |
| Internal Medicine            | 34.2%              | 50.4%                             |
| Emergency Medicine           | 40.7%              | 50.9%                             |

Candidates are reminded that they have to pass **BOTH** papers to pass the Part I examination

**NB. Each correct answer scores one positive mark. There is NO PENALTY for incorrect or left blank answers. The candidates score is the number of correct marks. The candidate's percentage score is this figure expressed as a percentage of the maximum score possible for the Paper (i.e. 180 correct out of 300 equals 60%).**